WC11 VIRTUAL CONGRESS
Welcome

Dear colleagues,

Welcome to 11th edition of the World Congress on Alternatives and Animal Use in the Life Sciences! Originally, in a pre-COVID19 era (can you still remember?), foreseen to be held in the city of Maastricht in The Netherlands, but – since the virus is still raging on across the world – now presented to you via the World Wide Web. This, of course, is rather unfortunate because we cannot offer you the great hospitality our city is famous for, and having spontaneous conversations digitally is not that obvious either. But we, as the Local Organizing Committee, took these potential downsides as a challenge to bring to you an innovative platform which should go beyond a generic series of online PowerPoint presentations. I believe we managed to develop great graphics to create a virtual, but realistic congress environment. We have added a few features (such as 3 talk shows) where lively discussions can be initiated, and due to the advances of IT technology, allow interactions across the globe. We hope that you will appreciate it.

As an overarching theme for designing the scientific program we have chosen: “3Rs in transition: from development to application”. This has been inspired by the observation that in the last decade tremendous progress has been made in a wide range to technologies (stem cells, organ-on-a-chip, genomics, micro-engineering, ...) all supportive for realizing non-animal test models of the highest grade, and boosting scientific research in the 3Rs, and in particular Replacement, to a yet unmet level, whilst acceptance of such new generation models by the various application domains is still quite low. We aim to explore this seeming discrepancy, not only in the field of chemical safety testing, but also in vaccine development, and certainly also in creating relevant human disease models. We hope that you will find this inspiring for your own efforts in the 3Rs.

Again, a warm welcome to the virtual congress and we hope you enjoy, get inspired and connected!

Jos Kleinjans,
Chair - Local Organizing Committee WC11

“Wherever possible, specialists should not be segregated in separate laboratories. The aim should rather be to assemble as many different kinds as possible under one roof.”


In line with this philosophy, the World Congress on Alternatives and Animal Use in the Life Sciences has been a triannual event that brings together specialists in the field of the 3Rs and closely related subjects. Despite the challenges we face in these times of COVID19 where videoconferencing is the norm and interacting on a personal level is reduced to a minimum, we have created congress surroundings that stimulate the exchange of scientific ideas and inspire you to connect to colleagues all over the globe.

In over 100 symposia, workshops and key note lectures, distinguished experts as well as young scientists share with us the fruit of their recent work on innovative non-animal methods, good research practice, harmonization, education, transition towards animal free research, ethics, etc. We have created networking areas where you can meet old friends and promising new contacts to exchange exciting ideas and forge bonds for future cooperation.

If you are an early career scientist, we want you to feel particularly welcome! We have collaborated with YOU-WC11 to organize several interactive sessions and events that promote dialogue amongst yourselves and with experienced peers. You are the future, we invite you to learn, share and challenge current views!

Organizing a world conference is no chick feed, but many hands make light work. We have much enjoyed putting together the scientific program and are very thankful for the help of the members of the international scientific committee, the local organizing committee, the many session organizers and of course our sponsors.

We hope that this virtual congress will bring you an experience you never to forget. Enjoy!

Pascalle Van Loo
Chair - International Scientific Committee
# Cutting Edge Science Over The Edge

**Chair**
Dr. Charu Chandrasekera
Canadian Centre for Alternatives to Animal Methods / Canadian Centre for the Validation of Alternative Methods, University of Windsor

**Co-Chairs**
Dr. Mike Wade, Health Canada
Ms. Cristina Inglis, Environment and Climate Change Canada

## Cutting Edge Science Over The Edge:
**3Rs Over The Edge:**
**Regulatory Acceptance and Next-Gen Education**
**August 23 - 27, 2023**
**Niagara Falls, Canada**

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**Table of Contents**

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Themes</td>
<td>6</td>
</tr>
<tr>
<td>Committees</td>
<td>7</td>
</tr>
<tr>
<td>Local organizing committee</td>
<td>7</td>
</tr>
<tr>
<td>Scientific committee</td>
<td>10</td>
</tr>
<tr>
<td>Organisation</td>
<td>11</td>
</tr>
<tr>
<td>Platform Info</td>
<td>13</td>
</tr>
<tr>
<td>Speakers Instructions</td>
<td>13</td>
</tr>
<tr>
<td>Program at a Glance</td>
<td>14</td>
</tr>
<tr>
<td>Week 1</td>
<td>14</td>
</tr>
<tr>
<td>Week 2</td>
<td>15</td>
</tr>
<tr>
<td>Program</td>
<td>18</td>
</tr>
<tr>
<td>Monday 23 August 2021</td>
<td>Day 1</td>
</tr>
<tr>
<td>Tuesday 24 August 2021</td>
<td>Day 2</td>
</tr>
<tr>
<td>Wednesday 25 August 2021</td>
<td>Day 3</td>
</tr>
<tr>
<td>Thursday 26 August 2021</td>
<td>Day 4</td>
</tr>
<tr>
<td>Friday 27 August 2021</td>
<td>Day 5</td>
</tr>
<tr>
<td>Monday 30 August 2021</td>
<td>Day 6</td>
</tr>
<tr>
<td>Tuesday 31 August 2021</td>
<td>Day 7</td>
</tr>
<tr>
<td>Wednesday 1 September 2021</td>
<td>Day 8</td>
</tr>
<tr>
<td>Thursday 2 September 2021</td>
<td>Day 9</td>
</tr>
<tr>
<td>You WC11 POSTERS</td>
<td>126</td>
</tr>
<tr>
<td>SPONSORS</td>
<td>127</td>
</tr>
<tr>
<td>Sponsors</td>
<td>146</td>
</tr>
</tbody>
</table>
THEMES

INNOVATIVE TECHNOLOGIES

DISEASE

ETHICS, WELFARE AND REGULATION

SAFETY

COMMITTEES
Local organizing committee

CONGRESS CHAIRS

Prof. Dr. Jos Kleinjans (chair)
Maastricht University, the Netherlands

Dr. Janny van den Eijnden-van Raaij (co-chair)
Institute for Human Organ and Disease Model Technologies, the Netherlands

COMMUNICATION COMMITTEE

Zvonimir Zvonar (chair)
European Partnership for Alternative Approaches to Animal Testing (EPAA), Belgium

Prof. Dr. Mathieu Vinken
Vrije Universiteit Brussel, Belgium

Prof. Dr. Ellen Fritsche
Heinrich-Heine-Universität Düsseldorf, Germany

Marjolein van Boxel, BSc
Gemeente Westvoorne, the Netherlands

Dr. Janny van den Eijnden-van Raaij
Institute for Human Organ and Disease Model Technologies, the Netherlands
COMMITTEES
Local organizing committee

SPONSORSHIP COMMITTEE

Dr. Rob Taalman (chair)
Cosmetics Europe, Belgium

Prof. Dr. Jos Kleinjans
Maastricht University, the Netherlands

Dr. Jan van Berghen
Nat. Institute for Public Health and the Environment, the Netherlands

Dr. Hans Keteleers
Concave, Belgium

OTHER LOC MEMBERS

Prof. Dr. Aldert H. Piersma
Utrecht University, the Netherlands

Dr. Anne Kienhuis
Nat. Institute for Public Health and the Environment, the Netherlands

Prof. Dr. Johan W.M. van Heemskerk
Maastricht University, the Netherlands

Prof. Dr. Bas J. Blaauwboer
Utrecht University, the Netherlands

Prof. Dr. Coenraad Hendriksen
Utrecht University, the Netherlands

Dr. Cyrille A.M. Noul
University of applied Sciences Utrecht, the Netherlands

Dr. Pascalle L.P. van Loo
Utrecht University, the Netherlands

Bas de Waard, MSc
The Netherlands Organisation for Health Research and Development, the Netherlands

Dr. Irene Mansou
European Partnership for Alternative Approaches to animal testing, Brussels, Belgium

Prof. Dr. Robert Passier
University of Twente, the Netherlands

Dr. Gianni Dal Negro
RD Platform Technology & Science, GSK, Hertfordshire, United Kingdom

Dr. Ad Peijnenburg
Wageningen University & Research, Wageningen, the Netherlands

Dr. Nicolas Rivron
Maastricht University, the Netherlands

Dr. Saskia Aan, MSc
Dutch Society for the Replacement of Animal Testing, The Hague, the Netherlands

Dr. Kirsty Reid
EFPIA – European Federation of Pharmaceutical Industries and Associations, Brussels, Belgium

Thomas Heynisch
European Partnership for Alternative Approaches to animal testing, Brussels, Belgium
COMMITTEES
Scientific committee

Dr. Pascale L.P. van Loo
Utrecht University, the Netherlands
Chair - International Scientific Committee

Janny van den Eijnden-van Raaij
Institute for human Organ and Disease Model Technologies (The Netherlands)

Laura Gribaldo
European Commission (Italy)

Adrian Ionescu
EPFL (Switzerland)

Paulin Jirkof
3R Koordinatorin UZH (Switzerland)

Nicole Kleinstreuer
NTP Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM) (USA)

Vijay Pal Singh
CSIR-Institute of Genomics & Integrative Biology (India)

Yasu Kanda
NIHS Japan (Japan)

Peter Loskill
Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB (Germany)

Kartheinz Peter
Monash University (Australia)

Kirsty Reid
European Federation of Pharmaceutical Industries and Associations (Belgium)

Kate Willet
Humane Society International (USA)

QUESTIONS & SUPPORT
info@wc11maastricht.org
+31(0)43-36 27 008

Klinkhamer Group wishes all participants an inspiring virtual experience.

connecting smart people.

professional congress organiser

Klinkhamer Group

dedicated by all means.
The ASPCA Animal Poison Control Center wishes to welcome all participants to the 11th World Congress on Alternatives and Animal Use in the Life Sciences.

Download the official WC11 app now in the app stores. It contains the most up-to-date program information and news. It also contains background information about the congress, speakers, parallel sessions, and posters. You can also use the app to put together your own program. Please note that the APP contains the same information as the WC11 Virtual Event Platform, and it is therefore not necessary to download. However, it can be useful for times when you are away from the computer for a while.

HOW TO DOWNLOAD THE APP?
You can find the WC11 app in the App Store and Google Play under the search term WC11 Maastricht. Use the QR codes on this page to go directly to the download page of the app.

TWEET ABOUT WC11?
Use #wc11maastricht

The ASPCA Animal Poison Control Center
www.aspca.org

WC11 3D VIRTUAL VENUE AND WC11 VIRTUAL EVENT PLATFORM
We are live! The WC11 3D Virtual Venue and the WC11 Virtual Exhibition Area are accessible to the public. The WC11 Virtual Event Platform is only accessible with a valid and paid registration.

So please take the time to visit our sponsors, booths, and if you are registered you can already create your personal profile and program. You can also view all posters, ask questions, and make notes within the platform.

INSTRUCTIONS FOR PRESENTERS
We will continually update and modify our instructions for presenters and chairpersons on our website. The most frequently asked questions can also be found on our website and we will also continually add to them.

If you have any questions or if you need technical information you can chat with us via the chat box on our website.

If you do not have a rehearsal scheduled yet, you can (only as a full session) schedule a rehearsal with one of our staff members via the button below.

SCHEDULE A REHEARSAL
Picktime.com > WC11Rehearsal
PROGRAM AT A GLANCE

The program of the 11th World Congress on Alternatives and Animal Use in the Life Sciences (WC11) will be virtual due to continued COVID-19 imposed restrictions, and will be spread over a two-week period, from 23 August - 2 September 2021.

Times mentioned are in Amsterdam/Brussels time (AMS CEST UTC+2)

**Week 1**

**MONDAY 23 AUGUST 2021 - DAY 1**

1.30 - 2.15 PM WC11 Virtual Opening Ceremony and Welcome Address
2.15 - 3.15 PM KEYNOTE: André Kuipers
3.15 - 3.30 PM WC11 TV live from the studio
3.30 - 5.30 PM Parallel Sessions + Q&A
5.30 - 5.45 PM WC11 TV live from the studio
5.45 - 6.45 PM KEYNOTE: Russel Thomas
6.45 - 7.00 PM WC11 TV live from the studio
7.00 - 9.00 PM Parallel Sessions + Q&A
9.00 - 11.00 PM WC11 Welcome Reception in WC11 Network Rooms

**TUESDAY 24 AUGUST 2021 - DAY 2**

2.30 - 3.00 PM WC11 TV live from the studio
3.00 - 5.00 PM Parallel Sessions + Q&A
5.00 - 5.15 PM WC11 TV live from the studio
5.15 - 6.15 PM KEYNOTE: Donald Ingber
6.15 - 6.30 PM WC11 TV live from the studio
6.30 - 8.30 PM Parallel Sessions + Q&A

**WEDNESDAY 25 AUGUST 2021 - DAY 3**

2.30 - 3.00 PM WC11 TV live from the studio
3.00 - 5.00 PM Parallel Sessions + Q&A
5.00 - 5.15 PM WC11 TV live from the studio
5.15 - 6.15 PM KEYNOTE: Jason Ekert
6.15 - 6.30 PM WC11 TV live from the studio
6.30 - 8.30 PM Parallel Sessions + Q&A
9.00 - 10.00 PM WC11 Talkshow 1 (Theme: Safety)

**THURSDAY 26 AUGUST 2021 - DAY 4**

2.30 - 3.00 PM WC11 TV live from the studio
3.00 - 5.00 PM Parallel Sessions + Q&A
5.00 - 5.15 PM WC11 TV live from the studio
5.15 - 6.15 PM KEYNOTE: Malcolm McLeod
6.15 - 6.30 PM WC11 TV live from the studio
6.30 - 8.30 PM Parallel Sessions + Q&A

**FRIDAY 27 AUGUST 2021 - DAY 5**

2.30 - 3.00 PM WC11 TV live from the studio
3.00 - 5.00 PM Parallel Sessions + Q&A
5.00 - 6.00 PM Pre-poster warm-up session
6.00 - 7.30 PM Poster sessions + Q&A with presenters
7.30 - 8.30 PM WC11 Talkshow 2 (Theme: Disease)

**Week 2**

**MONDAY 30 AUGUST 2021 - DAY 6**

2.30 - 3.00 PM WC11 TV live from the studio
3.00 - 5.00 PM Parallel Sessions + Q&A
5.00 - 5.15 PM WC11 TV live from the studio
5.15 - 6.15 PM KEYNOTE: Anne Deplazes
6.15 - 6.30 PM WC11 TV live from the studio
6.30 - 8.30 PM Parallel Sessions + Q&A

**TUESDAY 31 AUGUST 2021 - DAY 7**

1.00 - 1.30 PM WC11 TV live from the studio
1.30 - 2.30 PM KEYNOTE: Dr. Tharanga Thoradeniya
2.30 - 3.00 PM WC11 TV live from the studio
3.00 - 5.00 PM Parallel Sessions + Q&A
5.15 - 6.15 PM Poster sessions + Q&A with presenters
6.30 - 8.30 PM Parallel Sessions + Q&A

**WEDNESDAY 1 SEPTEMBER 2021 - DAY 8**

2.30 - 3.00 PM WC11 TV live from the studio
3.00 - 5.00 PM Parallel Sessions + Q&A
5.00 - 5.15 PM WC11 TV live from the studio
5.15 - 6.15 PM KEYNOTE: Ger Janssen
6.15 - 6.30 PM WC11 TV live from the studio
6.30 - 8.30 PM Parallel Sessions + Q&A
8.30 - 9.30 PM WC11 Talkshow 3 (Theme: Innovative Technologies)

**THURSDAY 2 SEPTEMBER 2021 - DAY 9**

2.30 - 3.00 PM WC11 TV live from the studio
3.00 - 5.00 PM Parallel Sessions + Q&A
5.00 - 5.15 PM WC11 TV live from the studio
5.15 - 6.15 PM KEYNOTE: Joseph Wu
6.15 - 6.30 PM WC11 TV live from the studio
6.30 - 7.30 PM Björn Ekwall Memorial Fund (BEMF) Award
6.30 - 8.00 PM WC11 Award Ceremony
8.00 - 8.45 PM Closing Ceremony
KIRSTEN PAULUS
Moderator

Nice to meet you! My name is Kirsten Paulus and I’m honoured to be your host during the 11th WC coming August and September. Wonderful that we’ll meet. Especially in these times it is important to get together, to share expertise and to invest in the development of alternatives for animal testing. Although it’s a virtual congress I’m sure that we’ll make it a successful exchange of knowledge.

Let’s take the opportunity to reconnect and start building relationships for the future. I’m going to do my very best and use my experience as a moderator and TV and Radio-presenter to make this all happen. With one shared goal: to make this congress inspiring, interesting and enjoyable.

I’m looking forward to see you all, work together with all of you from all around the world and make this congress unforgettable.

Take care. Stay safe,
Kirsten Paulus

TALKSHOW 1
Presence and Future of the Next-Generation Risk Assessment Approach.
© 24 August 2021, 09:00 PM CEST.

TALKSHOW 2
Human Diseases and Drug Development and will focus on neurodegenerative diseases.
© 27 August 2021, 07:30 PM CEST.

TALKSHOW 3
New technologies and the Use of human-derived material.
© 1 September 2021, 07:30 PM CEST.
PROGRAM
Monday 23 August 2021 - Day 1

1.30 - 3.30 PM
PLENARY SESSIONS

1.30 - 2.15 PM
WC11 Virtual Opening Ceremony and Welcome Address

The opening ceremony promises to be a one-of-a-kind unique experience. Live from the MECC in Maastricht, the Netherlands, where the congress was scheduled to take place in 2020.

During the opening ceremony we hear welcoming words from:
- Jos Kleinjans, Chair of the WC11 Local Organizing Committee
- Martin Paul, President of Maastricht University
- Kristin Schreiber, Director DG GROW at the European Commission
- Christian DeSaintes, Policy Officer, DG Research & Innovation at the European Commission

After the official welcoming remarks, the Harmonie St. Joseph Sittard from the Netherlands will provide the musical backdrop for the end of the opening ceremony.

Right after the opening ceremony we will switch to the WC11 Studio for the first keynote by WC11, Astronaut André Kuipers.

2.15 - 3.15 PM
KEYNOTE:
DR. ANDRÉ KUIPERS
European Space Agency

Born on 5 October 1958 in Amsterdam, the Netherlands, André Kuipers is married with three daughters and a son. He enjoys flying, scuba diving, skiing, hiking, traveling; and history.

In December 2002, André was assigned as a Flight Engineer for a Soyuz flight to the International Space Station. The DELTA mission was sponsored by the Dutch government in agreement between ESA and the Russian Federal Space Agency and took place from 19–30 April 2004. The flight had three objectives: to exchange the Soyuz spacecraft that serves as Space Station lifeboat, to exchange the Station crew and for André to perform 21 experiments in human physiology, biology, technology and education.

In August 2009, André was assigned to Expedition 30/31, a long-duration mission to the International Space Station called PromISSe. Together with Russian cosmonaut Oleg Kononenko and NASA astronaut Don Pettit, André was launched on 21 December 2011 from Baikonur Cosmodrome in Kazakhstan. During his mission, he took part in around 50 experiments covering a wide range of disciplines. He was the prime crewmember for the rendezvous and docking of ESA’s third Automated Transfer Vehicle. He was also involved in berthing SpaceX’s Dragon ferry. André and his crewmates returned to Earth on 1 July 2012.

Read more about André Kuipers on the website of the European Space Agency: https://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/Astronauts/André_Kuipers

3.15 - 3.30 PM
WC11 TV live from the studio

3:15 - 3.30 PM WC11 TV live from the studio

PROGRAM
Monday 23 August 2021 - Day 1

PARALLEL SESSION MO-1

3.30 - 5.30 PM

PARALLEL SESSION MO-1

3.30 - 5.30 PM MO-1 S21 5 Remove ATT, TABST & LABST. How far away we are to global harmonization for those safety tests?

Many institutions and organization have been working independently or jointly to remove those obsolete safety testing from the production and batch release testing for human (ATT) and veterinary vaccines (TABST, LABST). Many regulatory agencies and international organizations have successfully removed or suggested the remove or the waiver of those test. How far away are we from their global elimination?

Chair
L. Viviani, Humane Society International

Time Abstract Speakers
3.30 PM ID 293 REMOVE ATT, TABST & LABST: HOW FAR AWAY ARE WE TO GLOBAL HARMONIZATION FOR THOSE SAFETY TESTS?
L. Viviani, Humane Society International

3.45 PM ID 713 REMOVE ATT, TABST & LABST: THE JOURNEY OF HOW THEY BECAME OBSOLETE
K. Schulte, EPA - European Partnership for Alternative Approaches to Animal Testing

4.00 PM ID 1026 WAIVING THE TARGET ANIMAL BATCH SAFETY TESTS OF VETERINARY VACCINES: AN INDUSTRY PERSPECTIVE
C. Philippe, Boehringer Ingelheim

4.15 PM ID 759 THE INTEREST TO ADOPT A CHANGE ON TABST & LABST IN BRAZIL
M. Vinicius de Santana Leandro, Ministry of Agriculture Brazil

4.30 PM ID 260 THE PROCESS FOR THE DELETION OF ATT, TABST AND LABST IN INDIA
B. Poojary, HSI

4.45 PM ID 1114 REMOVAL OF ABNORMAL TOXICITY TEST FROM HUMAN VACCINES IN INDIA: A SUCCESSFUL APPROACH
S.K. Goel, Serum Institute of India

5.00 PM SESSION 21 Q&A
### PROGRAM
**Monday 23 August 2021 - Day 1**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.30 PM</td>
<td>THE EUSAAT INITIATIVE TO ESTABLISH A EUROPEAN NETWORK OF 3Rs CENTERS</td>
<td>W. Neuhaus, AIT Austrian Institute of Technology</td>
</tr>
<tr>
<td>3.45 PM</td>
<td>NORECOPA: A HUB OF INTERNATIONAL 3R RESOURCES</td>
<td>A. Smith, Novocea</td>
</tr>
<tr>
<td>4.00 PM</td>
<td>THE BERLIN-BRANDENBURG RESEARCH PLATFORM 3BR - RESEARCH AND</td>
<td>M. Schäfer-Korting, Freie Universität Berlin</td>
</tr>
<tr>
<td></td>
<td>GRADUATE EDUCATION SINCE 2014</td>
<td></td>
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<tr>
<td>4.15 PM</td>
<td>THE BERLIN-BRANDENBURG RESEARCH PLATFORM 3BR - RESEARCH AND</td>
<td>Karen Bieback, Institute of Transfusion Medicine and Immunology, Medical</td>
</tr>
<tr>
<td></td>
<td>GRADUATE EDUCATION SINCE 2014</td>
<td>Faculty Mannheim, Heidelberg University; German Red Cross Blood Service</td>
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<td></td>
<td></td>
<td>Baden-Württemberg - Hessen</td>
</tr>
<tr>
<td>4.30 PM</td>
<td>ASIAN CONGRESS SUPPORTED BY THE JAPANESE SOCIETY FOR ALTERNATIVES TO</td>
<td>Aline Chary, Luxembourg Institute of Science and Technology</td>
</tr>
<tr>
<td></td>
<td>ANIMAL METHODS</td>
<td></td>
</tr>
<tr>
<td>4.45 PM</td>
<td>PROMOTION OF THE 3RS CONSENSUS FORMATION IN CHINA THROUGH TRANSFORMATION</td>
<td>S. Cheng, Shanghai Jiaotong</td>
</tr>
<tr>
<td></td>
<td>BETWEEN ACADEMIA AND INDUSTRY</td>
<td></td>
</tr>
<tr>
<td>5.00 PM</td>
<td>SESSION 200 Q&amp;A</td>
<td></td>
</tr>
</tbody>
</table>

**Establishing a European Network of 3Rs Centers and 3Rs-Societies**

Several 3Rs centers have recently been established around the world dealing with different aspects of replacement, reduction and refinement of animals used for scientific purposes. The session aims at providing an overview of the diversity and experiences the various centers may face within their countries. In addition, it will discuss possible synergies and collaborative activities that can help furthering the implementation of 3Rs at different levels such as research, education and dissemination.

Session chair and co-chair
H. Spielmann, EUSAAT (European Society for Alternatives to Animal Testing) and C. Chandrasekera, Canadian Centre for Alternatives to Animal Methods (CCAAM)

### PROGRAM
**Monday 23 August 2021 - Day 1**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.30 PM</td>
<td>DAM TRANSPORTATION, FETAL SUFFERING AND LEGAL OBJECTIONS - WHY FETAL</td>
<td>Tilo Weber, German Animal Welfare Federation / Animal Welfare Academy</td>
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<td>BOVINE SERUM SHOULD BE A THING OF THE PAST</td>
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<tr>
<td>3.45 PM</td>
<td>REPLACING FOETAL BOVINE SERUM: A PIECE OF CAKE?</td>
<td>Jan Valk, 3Rs-Centre Utrecht Life Sciences, Utrecht University</td>
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<tr>
<td>4.00 PM</td>
<td>REPLACING FETAL BOVINE SERUM (FBS) - INNOVATIVE ALTERNATIVES AND</td>
<td>Karen Bieback, Institute of Transfusion Medicine and Immunology, Medical</td>
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<td>TRANSITION STRATEGIES</td>
<td>Faculty Mannheim, Heidelberg University; German Red Cross Blood Service</td>
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<td>Baden-Württemberg - Hessen</td>
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<td>4.15 PM</td>
<td>TOWARDS THE REPLACEMENT OF FOETAL BOVINE SERUM IN CELL CULTURE</td>
<td>Aline Chary, Luxembourg Institute of Science and Technology</td>
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<td>APPLICATION: THE EXAMPLE OF A549 CELLS</td>
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<td>4.30 PM</td>
<td>WHAT IS TRULY ANIMAL-FREE TESTING? MOVING TOWARDS ANIMAL-PRODUCT-FREE IN</td>
<td>Carol Treasure, XCellR8 Ltd, Techspace One, Neckwick Lane, Daresbury,</td>
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<td>VITRO SYSTEMS</td>
<td>Cheshire WA4 4AB, UK</td>
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<td>4.45 PM</td>
<td>A UNIQUE THREE DIMENSIONAL MULTIWELL PLATE FOR ANIMAL FREE EVALUATION</td>
<td>Stina Oredsson</td>
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<td>OF TOXICITY</td>
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<tr>
<td>5.00 PM</td>
<td>SESSION 167 Q&amp;A</td>
<td></td>
</tr>
</tbody>
</table>
PROGRAM
Monday 23 August 2021 - Day 1

3.30 - 5.30 PM  MO-1 S161  Validation redefined: needs and opportunities for the validation of (r) evolutionary non-animal approaches for chemical safety assessment

This workshop focuses on how to validate new paradigms for chemical risk assessment, e.g. Next Generation Risk Assessment (NGRA). This is perceived challenging because these paradigms are based on combinations of new approach methods (NAMs). Previous workshops on this topic concluded that a comprehensive evaluation of biological relevance, scientific validity and regulatory purpose of NAMs and assessment strategies is needed. Case studies that provide practical experience with NCRA were considered important to build up confidence to facilitate regulatory acceptance. In this workshop the topic will be presented from the angles of different stakeholders followed by an interactive panel discussion.

Session chair
M. Oelgeschlaeger, German Federal Institute for Risk Assessment (BfR)

Time       Abstract                  Speakers
3.30 PM     ID 92                    SETTING THE SCENE FOR A NEW PARADIGM FOR RISK ASSESSMENT: EVOLUTION VERSUS REVOLUTION
Aldert Piersma, RIVM
3.45 PM     ID 668                   VALIDATION IN A REGULATORY CONTEXT - A EUR ECVAM PERSPECTIVE ON PRINCIPLES, PRACTICE AND PROGRESS
Maurice Whelan, European Commission, Joint Research Centre (JRC)
4.00 PM     ID 144                   RETHINKING VALIDATION: BUILDING CONFIDENCE IN HUMAN MODELS THROUGH BIOLOGICALLY BASED DESIGN
Rebecca Clewell, 21st Century Tox Consulting LLC
4.15 PM     ID 121                   NEXT GENERATION RISK ASSESSMENT FOR CONSUMER SAFETY: WHAT DO WE NEED FROM VALIDATION?
Cari Westmoreland, Unilever SEAC
4.30 PM     ID 429                   TOWARDS AN ANIMAL-FREE HUMAN HEALTH ASSESSMENT: WHAT ARE THE REGULATORY NEEDS?
Peter Bos
4.45 PM     ID 787                   IMPROVEMENT OF IN SILICO MODELS FOR TOXICITY PREDICTION BY IDENTIFYING, CHARACTERISING AND REDUCING UNCERTAINTIES
Mark Cronin
5.00 PM     SESSION 161 Q&A

PROGRAM
Monday 23 August 2021 - Day 1

3.30 - 5.30 PM  MO-1 S149  Implementing openness: promoting transparency around animal research across regions

Transparency is an objective of Directive 2010/63 on the protection of animals used for scientific purposes. By creating greater compliance and accountability, along with trust and social acceptance, transparency promotes a level playing field and supports competitiveness. An increasing number of European states are supporting formal ‘transparency agreements’ around their use of animals in research. In this round-table session five speakers will talk from different perspectives about their experiences of implementing greater openness, highlighting the successes and the challenges. There will be opportunity of discussion and questions related to increasing transparency around the use of animals in research.

Session chair
B. Williams, Understanding Animal Research

Time       Abstract                  Speakers
3.30 PM     ID 15                    OPENNESS IN THE UK SINCE THE CONCORDAT
Wendy Jarrett, Understanding Animal Research
3.45 PM     ID 4                     THE TRANSPARENCY AGREEMENT IN SPAIN: AN EXAMPLE OF SUCCESS
Javier Guellán, AAALAC International
4.00 PM     ID 544                   IMPLEMENTING TRANSPARENCY IN PORTUGAL
Ana Santos, NOVA Medical School, NOVA University Lisboa, FELASA
4.15 PM     ID 8                     TALKING ABOUT HARMS
Barney Reed, RSPCA
4.30 PM     ID 458                   PROMOTING TRANSPARENCY AROUND ANIMAL RESEARCH ACROSS REGIONS
Susanna Louhimies, European Commission
5.00 PM     SESSION 149 Q&A
## PROGRAM

**Monday 23 August 2021 - Day 1**

### 3.30 - 5.30 PM MO-1 S79

**Methods to enhance biotransformation capability for in vitro high throughput screening assays**

In vitro high-throughput screening (HTS) assays have been developed over the past decade for generating toxicity profiles for thousands of data-poor environmental compounds. Although highly successful, the effort has been limited by a lack of effective biotransformation capability in the standard cell types used in these in vitro assays. Thus, results from these assays may not accurately reflect in vivo activity. To address this problem, several laboratories are developing methods to provide metabolic activation capability to these in vitro systems. This symposium will highlight novel, ongoing approaches for providing biotransformation capability to HTS assays, with an emphasis on human-relevant metabolism. In vitro high-throughput screening (HTS) assays have been developed over the past decade for generating toxicity profiles for thousands of data-poor environmental compounds. Although highly successful, the effort has been limited by a lack of effective biotransformation capability in the standard cell types used in these in vitro assays. Thus, results from these assays may not accurately reflect in vivo activity. To address this problem, several laboratories are developing methods to provide metabolic activation capability to these in vitro systems. This symposium will highlight novel, ongoing approaches for providing biotransformation capability to HTS assays, with an emphasis on human-relevant metabolism.

Session Chair: Kristine Witt, National Toxicology Program/NIEHS and Menghang Xia, SOT/National Center for Advancing Translational Sciences

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<tr>
<th>Time</th>
<th>Abstract</th>
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<tr>
<td>3.30 PM</td>
<td>INCORPORATION OF A METABOLIC COMPONENT INTO IN VITRO TOX21 HIGH THROUGHPUT SCREENING ASSAYS</td>
<td>Menghang Xia, National Center for Advancing Translational Sciences, NIH</td>
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<td>3.45 PM</td>
<td>RETROFITTING AN IN VITRO TOX21 HIGH THROUGHPUT SCREENING ASSAY FOR P53 ACTIVATION WITH METABOLIC CAPABILITY: COMPARING RESULTS FROM HUMAN AND RAT LIVER MICROSOME PREPARATIONS</td>
<td>Kristine Witt, U.S. National Toxicology Program/NIEHS/NIH</td>
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<tr>
<td>4.00 PM</td>
<td>A HUMAN XENOBIOTIC METABOLIC SYSTEM ADAPTED TO QUANTITATIVE HIGH-THROUGHPUT SCREENING PROCESSES</td>
<td>Ludovic LE HEGARAT, ANSES, French Agency for Food, Environmental and Occupational Health &amp; Safety</td>
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<td>4.15 PM</td>
<td>DEVELOPMENT OF METABOLICALLY COMPETENT HUMAN AND RAT SPHEROID MODELS AND APPLICATION OF HIGH-THROUGHPUT TRANSCRIPTOMICS TOWARDS 3R'S STRATEGY</td>
<td>Sreenivasa Ramahragh, Biomolecular Screening Branch, Division of National Toxicology Program, National Ins</td>
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<tr>
<td>4.30 PM</td>
<td>USE OF HUMAN CELL LINES WITH DIFFERENT BIOACTIVATION CAPACITIES TO DETERMINE THE GENOTOXIC MECHANISM OF ACTION</td>
<td>Marc Audebert, INRAE TOXALIM</td>
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<td>4.45 PM</td>
<td>DECIDING ON AN ASSAY SETUP TO CONTROL TEST CHEMICAL CONCENTRATIONS IN VITRO</td>
<td>Nynke Kramer</td>
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<tr>
<td>5.00 PM</td>
<td>SESSION 79 Q&amp;A</td>
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PARALLEL SESSION MO-2

7.00 - 9.00 PM MO-2 S71 2
Biomarker-based in vitro tools targeting early Alzheimer’s in a human relevant fashion

Decades of research using animal models for Alzheimer’s disease did not translate into benefits for patients. Causes of failure are several: (i) animal models do not develop human pathology which challenges the human relevance of these models; (ii) traditionally, research focus has been on disease stages with irreversible brain damage and thus a low expected impact of novel therapeutics and (iii) animal models represent

Chair: Erwin L. Roggen, ToxGenSolutions BV

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<td>7.00 PM</td>
<td>ID 19</td>
<td>THE CURRENT TRANSLATIONAL GAP: PROBLEMS AND SOLUTIONS</td>
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<td>7.30 PM</td>
<td>ID 65</td>
<td>LINCRNAS AS NOVEL SOURCE OF DIAGNOSTIC APPLICATIONS FOR EARLY ALZHEIMER’S DISEASE AND OTHER DEMENTIA TYPES - ADDIA CONSORTIUM AND ADNIT CONSORTIUM</td>
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<td>8.00 PM</td>
<td>ID 251</td>
<td>MAPPING POTENTIAL BIOMARKERS FOR EARLY SPORADIC ALZHEIMER’S: STATUS OF THE INTERREG VL-NL PROJECT ‘MEMORIES’</td>
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<td>8.30 PM</td>
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<td>SESSION 71 Q&amp;A</td>
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### PROGRAM
**Monday 23 August 2021 - Day 1**

#### 7.00 - 9.00 PM MO-2 S235
**Case studies of industrial adoption using Microphysiological Systems**

- The Pharmaceutical industry has implemented a broad array of in vitro systems to support preclinical evaluation of new drug candidates. Microphysiological Systems (MiPS) are considered to further improve prediction of safety and efficacy of new drug candidates prior to their use in humans. MiPS-based assays are increasingly becoming part of the internal decision-making processes within Pharma and this session aims to present case studies of industrial adoption while discussing their impact on the 3R’s.

#### Time | Abstract |
--- | --- |
7.00 PM | ID 95 | INTRODUCTION TO THE SESSION: CASE STUDIES FROM INDUSTRY USING MICROPHYSIOLOGICAL SYSTEMS  
L. Ewart, Emulate Inc.  

7.15 PM | ID 520 | HUMAN IMMUNOCOMPETENT ORGAN ON CHIP PLATFORMS ALLOW SAFETY PROFILING OF TUMOR-TARGETED T-CELL BISPECIFIC ANTIBODIES  
G. A. Hamilton, Emulate Inc. and L. Cabon, Roche  

7.30 PM | ID 868 | A HIGH-THROUGHPUT MICROFLUIDIC PLATFORM FOR DRUG SCREENING ON VASCULARIZED 3D TISSUES  
J. Joore, Mimetas  

7.45 PM | ID 204 | A HUMAN-DERIVED PROXIMAL TUBULE-ON-A-CHIP REPLICATES ASO-INDUCED KIDNEY INJURY BIOMARKERS  
T. Nieskens, AstaZeneca  

8.00 PM | ID 876 | ORGANOIDS: LESS ANIMAL STUDIES, MORE RELEVANT DATA  
R. Vries, Hubrecht Institute  

8.30 PM | | SESSION 235 Q&A  

Session chair and co-chair  
A. Roth, Hoffman La Roche and L. Ewart, AstaZeneca  

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#### 7.00 - 9.00 PM MO-2 S163
**New Approach Methodologies (NAM)-supported Read-Across Approaches for Regulatory Purposes**

- Read-across (RAx) is one of the most commonly used alternative approaches for data gap-filling in registrations submitted under cosmetics safety assessment and REACH. New approach methodologies (NAM) have started to be deployed to reduce uncertainty and establish robust read-across. In this session, the use of NAM-supported RAx will be introduced and exemplary case studies from the Cosmetics Europe Long-Range Science Strategy and the EU-ToxRisk project will be presented. The EU-ToxRisk advisory document will be described. A strong focus will be given on its regulatory foundation and future impact. Finally, the available approaches and tools for RAx-supported risk assessment will be discussed.

#### Time | Abstract |
--- | --- |
7.00 PM | ID 856 | SETTING THE SCENE: NEW APPROACH METHODOLOGIES (NAM)-SUPPORTED READ-ACROSS APPROACHES  
Henricke Kamp, BASF SE  

7.15 PM | ID 281 | A CASE STUDY COMBINING READ-ACROSS AND NAM, THE EXAMPLE OF PROPYL-PARABEN IN SYSTEMIC TOXICITY, FROM A TO Z  
Gladys Ouedraogo, Cosmetics Europe  

7.30 PM | ID 596 | FROM CASE STUDIES TO A REGULATORY GUIDANCE: THE EU-TOXRISK NAM-ASSISTED RAx ADVISORY DOCUMENT  
Bob van de Water, Leiden University  

7.45 PM | ID 650 | REGULATORY FEEDBACK ON THE EU-TOXRISK (NAM)-SUPPORTED READ-ACROSS ADVISORY DOCUMENT  
Matthias Herzler, German Federal Institute for Risk Assessment (BfR)  

8.00 PM | ID 301 | NAVIGATING THE REGULATORY LANDSCAPE OF READ-ACROSS: A PERSPECTIVE OF APPROACHES, TOOLS WITHIN AN IATA FRAMEWORK  
Lucina E. Lizarraga, US EPA  

8.30 PM | | SESSION 163 Q&A  

Session chair and co-chair  
S. Hougaard Bennekou, National Food Institute, Technical University of Denmark and D. Kroese, TNO, Netherlands Organisation for Applied Scientific Research
Innovative Technologies, Disease, Ethics, Welfare and Regulation

**PROGRAM**

**Monday 23 August 2021 - Day 1**

### 7.00 - 9.00 PM MO-2 S196

**Barriers of Refinement Use in Practice**

Refinement research has the potential to improve the lives of many animals. However, implementation of Refinement is often limited, even when refinements are based on scientifically sound discoveries. Barriers to implementation may include: economical constraints, apprehensions about changes to data, limitations in products marketed by animal research suppliers and people (their cultural backgrounds, attitudes and beliefs towards animals). This workshop explores what is perceived as the potential barriers to implementation of Refinement, with the aim of highlighting paths forward for successful application. Real case studies will be presented to reveal existing barriers and as examples on ways to achieve change.

Session chair and co-chair
K. Hermann, Johns Hopkins University Bloomberg School of Public
Center for Alternatives to Animal Testing

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<th>Time</th>
<th>Abstract</th>
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<tr>
<td>7.00 PM</td>
<td>ID 150</td>
<td>PERCEIVED BARRIERS TO IMPLEMENTING REFINEMENTS IN EUTHANASIA FOR RODENTS</td>
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<td>L. Amendola, University of British Columbia</td>
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<td>7.15 PM</td>
<td>ID 819</td>
<td>PRACTICAL CHALLENGES AND CONSIDERATIONS IN REFINING EUTHANASIA METHODS IN LABORATORY ANIMAL RESEARCH IN RODENTS – A PHARMACEUTICAL INDUSTRY CASE STUDY</td>
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<td>S. Robinson, AstraZeneca</td>
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<td>7.45 PM</td>
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<td>LOW STRESS HANDLING OF MICE: CHALLENGES AND SOLUTIONS FOR IMPLEMENTATION</td>
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<td>J. Hurst, University of Liverpool</td>
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<td>8.00 PM</td>
<td>ID 366</td>
<td>EDUCATION AND TRAINING TO FULLY IMPLEMENT REFINEMENT METHODS IN PRACTICE</td>
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<td>K. Hermann, Johns Hopkins Bloomberg School of Public Health &amp; CAAT</td>
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<td>SESSION 196 Q&amp;A</td>
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### 7.00 - 9.00 PM MO-2 S111

**Modern, Mechanistic Approaches to Cancer Risk Assessment**

For decades, risk assessors have relied on the rodent cancer bioassays to identify potential human carcinogens. The rodent bioassays are required by numerous regulatory authorities for carcinogenicity assessment. However, five decades of research have revealed more informative, human-relevant approaches to assess potential carcinogenic effects. Questions are being asked about how to modernize cancer risk assessment through the use of mechanistic approaches that reduce testing on animals and provide more health protective information to ensure chemical safety. During this session, experts will deliver presentations and a panel discussion providing insight into current challenges and opportunities in designing human-relevant chemical carcinogenicity assessment.

Session chair
Gina Hilton, PETA Science Consortium International e.V.

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<td>7.00 PM</td>
<td>ID 11</td>
<td>MODERNIZING THE NTP’S CARCINOGENICITY TESTING PROGRAM</td>
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<td>Warren Casey, US National Toxicology Program</td>
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<td>7.15 PM</td>
<td>ID 72</td>
<td>TOWARDS REPLACING THE TWO-YEAR BIOASSAY WITH SHORT-TERM NAMS: GENOMIC AND NONGENOMIC ACTIVATION LEVELS CAN IDENTIFY RAT LIVER TUMORIGENS</td>
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<td>Chris Certon, Environmental Protection Agency, Center for Computational Toxicology and Exposure</td>
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<td>7.30 PM</td>
<td>ID 17</td>
<td>APPLICATION OF THE KEY CHARACTERISTICS IN CARCINOGEN HAZARD IDENTIFICATION</td>
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<td>Kathryn Guyton, IARC</td>
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<td>7.45 PM</td>
<td>ID 44</td>
<td>RECAAP: CARCINOGENICITY WAIVERS FOR FOOD-USE PESTICIDE REGISTRATION</td>
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<td>Gina Hilton, PETA Science Consortium International e.V</td>
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<td>8.00 PM</td>
<td>ID 170</td>
<td>DEVELOPING AN INTEGRATED APPROACH TO TESTING AND ASSESSMENT FOR NON-GENOTOXIC CARCINOGENS</td>
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<td>Nathalie Drewe, Organisation for Economic Co-operation and Development</td>
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<td>8.15 PM</td>
<td>ID 63</td>
<td>ADVANCING CARCINOGENICITY ASSESSMENT: A NOVEL METHODOLOGICAL APPROACH TO INTEGRATE INFORMATION AND FURTHER THE IMPACT ON THE 3RS</td>
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<td>Federica Madia, European Commission, Joint Research Centre</td>
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<td>SESSION 111 Q&amp;A</td>
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PROGRAM
Tuesday 24 August 2021 - Day 2

PLENARY SESSIONS

2.30 - 3.00 PM WC11 TV - Live from the studio

PARALLEL SESSION TUE-1

3.00 - 5.00 PM TUE-1

S75 Modeling the musculoskeletal system and related disorders in vitro – Cells, scaffolds and biomechanics

The development of physiological relevant models to simulated parts of the musculoskeletal system such as bone or cartilage requires the combination of tissue engineering, cell biology and biomechanics. In the proposed symposium different aspects and approaches for this specific area will be presented including bone-, cartilage- or joint-on-a-chip technologies, macro-tissue and bioreactor approaches towards sophisticated tissue engineering and qualitative network models.

Session chair
Frank Schulze, German Centre for the Protection of Laboratory Animals (Bf3R) and Marcel Karperien, University of Twente, The Netherlands

Time | Abstract | Speakers
---|---|---
3.00 PM | THE EFFECT OF MECHANICAL LOADING IN A BONE-ON-A-CHIP | Frank Schulze, German Federal Institute for Risk Assessment; German Centre for the Protection of Laboratory Animals
3.15 PM | MICROFABRICATION TECHNOLOGIES FOR ENGINEERING OF A MOVING JOINT-ON-CHIP | Marcel Karperien, University of Twente
3.45 PM | IN SILICO MODELLING AS A WAY TO PRIORITIZE EXPERIMENTS AND REDUCE EXPERIMENTAL TESTING FOR OSTEOARTHRITIS DRUG TARGET DISCOVERY | Raphaëlle Lesage, Prometheus; Division of Skeletal Tissue Engineering, KU Leuven, Belgium; Biomechanics Section, KU Leuven
4.00 PM | DEVELOPING AN IN VITRO MODEL OF GLUCOCORTICOID-INDUCED OSTEOPOROSIS | Annemarie Lang, Department of Rheumatology and Clinical Immunology, Charité-Universitätsmedizin Berlin; German Rheumatism Research Center
4.30 PM | AN IN VITRO 3D FRACTURE GAP MODEL AS A TOOL FOR PRECLINICAL TESTING PROCEDURES | Moritz Pfeiffenberger
4.45 PM | IN SILICO MODELLING AS A WAY TO PRIORITIZE EXPERIMENTS AND REDUCE EXPERIMENTAL TESTING FOR OSTEOARTHRITIS DRUG TARGET DISCOVERY | Raphaëlle Lesage, Prometheus; Division of Skeletal Tissue Engineering, KU Leuven, Belgium; Biomechanics Section, KU Leuven
5.00 PM | DEVELOPING AN IN VITRO MODEL OF GLUCOCORTICOID-INDUCED OSTEOPOROSIS | Annemarie Lang, Department of Rheumatology and Clinical Immunology, Charité-Universitätsmedizin Berlin; German Rheumatism Research Center
5.15 PM | AN IN VITRO 3D FRACTURE GAP MODEL AS A TOOL FOR PRECLINICAL TESTING PROCEDURES | Moritz Pfeiffenberger

SESSION 75 Q&A

PROGRAM
Tuesday 24 August 2021 - Day 2

10.30 - 11.00 AM WC11 TV - Live from the studio

REHOMING RODENTS - PERSPECTIVE AND EXPERIENCE OF AN ANIMAL WELFARE ORGANISATION

J. Fitzi, Swiss Animal Protection

Session chair
M. Janssens, Netherlands National Committee for the protection of animals used for scientific purposes (NCaD)

Time | Abstract | Speakers
---|---|---
3.00 PM | REHOMING RODENTS - WHAT'S YOUR OPINION? | M. Janssens, Utrecht University
3.15 PM | RE-HOMING RODENTS - A UNIVERSITY PERSPECTIVE | P. Jirkof, University of Zurich
5.30 PM | REHOMING RODENTS - PERSPECTIVE AND EXPERIENCE OF AN ANIMAL WELFARE ORGANISATION | J. Fitzi, Swiss Animal Protection
3.45 PM | RE-HOMING RODENTS: OPPORTUNITIES AND CHALLENGES | P. Van Loo, Utrecht University
4.00 PM | HOLDING ANIMAL-BASED RESEARCH TO OUR HIGHEST ETHICAL STANDARDS | Andrew Fenton
4.30 PM | SESSION 244 Q&A |
### PROGRAM
**Tuesday 24 August 2021 - Day 2**

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<th>Time</th>
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<td>ID 306</td>
<td>3.15 PM</td>
<td>ID 268</td>
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<tr>
<td>3.15 PM</td>
<td>HUMAN IPS CELL-BASED MODELS FOR PREDICTIVE TOXICOLOGY</td>
<td>5.30 PM</td>
<td>HUMAN ENGINEERED HEART TISSUES AS A VERSATILE IN VITRO MODEL</td>
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<td>5.30 PM</td>
<td>METABOLIC MATURATION OF HUMAN IPS CELL-DERIVED HEPATOCYTE-LIKE CELLS IN MULTICELLULAR SPHEROID CULTURE</td>
<td>3.45 PM</td>
<td>3D MINI BRAIN MODEL FOR HIGH-THROUGHPUT SCREENING</td>
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<td>4.00 PM</td>
<td>ID 57</td>
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<td>4.00 PM</td>
<td>CELL SHEET-BASED MYOCARDIAL TISSUE ENGINEERING FOR ANIMAL ALTERNATIVE</td>
<td>4.30 PM</td>
<td>SESSION 215 Q&amp;A</td>
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**Chair:** Y. Kanda, National Institute of Health Sciences (NIHS) Japan

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### PROGRAM
**Tuesday 24 August 2021 - Day 2**

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<td>3.00 PM</td>
<td>ID 620</td>
<td>3.15 PM</td>
<td>ID 137</td>
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<tr>
<td>3.15 PM</td>
<td>WHERE ARE WE NOW: REPLACEMENT OF IN VIVO SKIN SENSITISATION ASSAYS</td>
<td>5.30 PM</td>
<td>ID 48</td>
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<td>5.30 PM</td>
<td>EUROPEAN LESSONS LEARNED FROM REACH SUBMISSIONS USING NAM SKIN SENSITISATION DATA</td>
<td>3.45 PM</td>
<td>ID 367</td>
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<td>3.45 PM</td>
<td>SKIN SENSITIZATION TESTING STRATEGY FOR JAPAN AND ASIA</td>
<td>4.00 PM</td>
<td>ID 108</td>
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<td>4.00 PM</td>
<td>MODERATED PANEL DISCUSSION: IS IT TIME TO SAY “BYE BYE BUEHLER”?</td>
<td>4.15 PM</td>
<td>ID 102</td>
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<td>4.15 PM</td>
<td>EU-JETVAL THYROID VALIDATION STUDY: CHEMICAL SELECTION STRATEGY</td>
<td>4.15 PM</td>
<td>SESSION 126 Q&amp;A</td>
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**Chair:** J. Ezendam, National Institute for Public Health and the Environment

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**3.00 - 5.00 PM TUE-15 S115**

Emerging 3D organoid technology toward animal alternative testing

The ability to generate 3D organoids or “mini-organs” that more closely mimic native tissue function has great potential for various applications, such as safety issues. Many strategies have been taken to build human-relevant structures through developmental principles, self-guided assembly, and bioengineering. These efforts have resulted in the development of organ-specific, human-relevant models. However, effective implementation of these advances requires an understanding of their advantages and limitations for practical application. Here we bring together top scientists from regulatory, academia and industry to discuss the exciting challenges for engineering complexity into organ-like systems, their implementation, and future perspectives.

**Chair:** Y. Kanda, National Institute of Health Sciences (NIHS) Japan

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**3.00 - 5.00 PM TUE-15 S116**

Modern Regulatory Methods for Skin Sensitization: Bye-Bye Buehler?

New approach methods (NAMs) for skin sensitization are accepted in regulatory and industry settings. Combining NAMs in defined or integrated approaches, predicts human skin sensitization hazard often better than in vivo methods. Yet, animal tests are still used to fulfill skin sensitization-data requirements. The Buehler, in particular, not only impacts animal welfare but receives scientific criticism concerning sensitivity when compared to other methods. The goal of this workshop is to breach the controversial question: “Is the Buehler a redundant in vivo test?” and discuss how to build confidence in non-animal skin sensitization approaches for chemical hazard and safety decisions.

**Session chair:** J. Ezendam, National Institute for Public Health and the Environment

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**Modern Regulatory Methods for Skin Sensitization: Bye-Bye Buehler?**

- Title: Where are we now: Replacement of in vivo skin sensitization assays
  - ID: 620
  - Speaker: Emma Grange, Cruelty Free International

- Title: European Lessons Learned from REACH Submissions using NAM skin sensitization data
  - ID: 137
  - Speaker: Laura Rossi, European Chemicals Agency

- Title: A North American regulatory perspective on skin sensitization risk assessment
  - ID: 48
  - Speaker: Nicole Kerstetreuer, NIEHS/NICEATM

- Title: Skin sensitization testing strategy for Japan and Asia
  - ID: 367
  - Speaker: Takao Ashikaga, National Institute of Health Sciences

- Title: Moderated panel discussion: Is it time to say “bye bye Buehler”?
  - ID: 108
  - Speaker: Janine Ezendam, National Institute for Public Health and the Environment (RIVM)

- Title: EU-JETVAL thyroid validation study: chemical selection strategy
  - ID: 102
  - Speaker: Francesca Pistollato, European Commission, Joint Research Centre

- Title: Session 126 Q&A
3.00 - 5.00 PM TUE-1 S114  | Artificial Intelligence for Risk and Safety Assessment

Artificial Intelligence (AI) consists of an array of methodologies that are capable of extracting complex patterns from big data. The session will discuss the basic concept and methodologies of AI applied in predictive toxicology. The 21st century toxicology has increasingly used new tools, particularly alternative methodologies which generates new data streams. With examples from risk assessment and drug development, the guiding principle and best practice of applying AI in toxicology will be discussed with a specific emphasis on application for the new data streams.

Session chair and co-chair
W. Tong, NCTR/FDA and T. Hartung, Johns Hopkins University

Time Abstract Speakers
3.00 PM ID 27 ARTIFICIAL INTELLIGENCE FOR DRUG SAFETY AND BIOMARKER DEVELOPMENT Weida Tong, NCTR/FDA
3.15 PM ID 952 ARTIFICIAL INTELLIGENCE FOR SAFETY IN DRUG DISCOVERY Stefan Platz, AstraZeneca
5.30 PM ID 906 DEEP LEARNING FOR PREDICTING MOLECULAR PROPERTIES Djork-Arné Clevert, Bayer AG, Machine Learning Research
4.00 PM ID 902 REFERENCE-FREE ANNOTATION FOR SINGLE-CELL TRANSCRIPTOMICS USING GRAPH NEURAL NETWORK MODEL Xiaohui Fan, College of Pharmaceutical Sciences, Zhejiang University
4.15 PM ID 916 INTERBERT: A BERT-BASED CAUSAL INFERENCE FRAMEWORK FOR IMPROVING AI INTERPRETABILITY Z. Liu, NCTR/FDA

Human relevance in both dose and effect for in vitro testing of respiratory toxicity

Technical developments have resulted in systems that can be used to expose cells via the air to mimic inhalation exposure. Decisions on the exposure system and the cell model are dependent on the research question. However, results of the exposures need to be translated to human effects at some point. In this session, the translation of inhaled concentrations and effects in Air-Liquid-Interface (ALI) cultured cell models to human effects will be addressed.

Session chair
R. Vandebriel, RIVM and H. Braakhuis

Time Abstract Speakers
3.00 PM ID 134 NEEDS FOR APPLICATION OF AIR-LIQUID-INTERFACE MODELS IN RISK ASSESSMENT OF INHALED COMPOUNDS Yvonne Staal, RIVM
3.15 PM ID 492 APPLIED AND DELIVERED DOSE DETERMINATION FOR ALI ACUTE INHALATION TOXICITY TESTING OF A PETROLEUM-DERIVED SUBSTANCE Ewelien Fijnje, VITO NV (Flemish Institute for Technological Research)
5.30 PM ID 213 IN-VITRO INHALATION EXPERIMENTATION DESIGN AND DOSIMETRY CONSIDERATIONS FOR IN-VITRO TO IN-VIVO PREDICTION OF RESPIRATORY TOXICITY Detlef Ritter, Fraunhofer ITEM
3.45 PM ID 96 EXPOSURE OF LUNG CELL MODELS TO COMPLETE UNFILTERED AND FILTERED EXHAUST FROM GASOLINE / DIESEL CARS AND COMPARISON WITH FINDINGS IN HUMANS Barbara Rothern-Rutshauer, Adolphe Merkle Institute, University of Fribourg, Fribourg, Switzerland
4.00 PM ID 320 ORGANOID-BASED EXPANSION OF AIRWAY EPITHELIAL CELLS FROM CLINICAL SAMPLES WITH LOW CELL NUMBERS FOR MODELLING EFFECTS OF CIGARETTE SMOKE EXPOSURE Pieter Hiemstra, Department of Pulmonology, Leiden University Medical Center, Leiden, The Netherlands
4.15 PM ID 1089 USE OF CAUSE-AND-EFFECT ANALYSIS TO OPTIMIZE THE RELIABILITY OF IN-VITRO INHALATION TOXICITY MEASUREMENTS USING AN AIR-LIQUID INTERFACE Frank Stefan Bierkandt
4.30 PM SESSION 156 Q&A
PROGRAM
Tuesday 24 August 2021 - Day 2

5.00 - 6.30 PM
PLENARY SESSIONS

5.00 - 5.15 PM
WC11 TV live from the studio

5.15 - 6.15 PM
KEYNOTE:

DR. DONALD INGBER
Harvard University

Donald E. Ingber, M.D., Ph.D. is the Founding Director of the Wyss Institute for Biologically Inspired Engineering at Harvard University, Judah Folkman Professor of Vascular Biology at Harvard Medical School and the Vascular Biology Program at Boston Children's Hospital, and Professor of Bioengineering at the Harvard John A. Paulson School of Engineering and Applied Sciences. He received his B.A., M.A., M.Phil., M.D. and Ph.D. from Yale University.

Ingber is a pioneer in the field of biologically inspired engineering, and at the Wyss Institute, he currently leads a multifaceted effort to develop breakthrough bioinspired technologies to advance healthcare and to improve sustainability. His work has led to major advances in mechanobiology, tumor angogenesis, tissue engineering, systems biology, nanobiotechnology and translational medicine. Through his work, Ingber also has helped to break down boundaries between science, art and design.

Ingber has authored more than 450 publications and over 120 issued or pending patents, founded 5 companies, and been a guest speaker at more than 500 events internationally. He is a member of the National Academy of Medicine, National Academy of Inventors, American Institute for Medical and Biological Engineering, and the American Academy of Arts and Sciences. He was named one of the Top 20 Translational Researchers world-wide in 2012 (Nature Biotechnology), a Leading Global Thinker of 2015 (Foreign Policy magazine), and has received numerous other honors in a broad range of disciplines, including the Robert A. Pritzker Award and the Shu Chien Award (Biomedical Engineering Society), the Roux Whipple Award (American Society for Investigative Pathology), the Lifetime Achievement Award (Society of In Vitro Biology), the Leading Edge Award (Society of Toxicology), Founders Award (Biophysical Society) and the Department of Defense Breast Cancer Innovator Award.

One example of Ingber’s most recently developed technologies are Human Organs-on-Chips. These are microfluidic cell culture devices created with microchip manufacturing methods and lined by living human cells, which are being used to replace animal testing as a more accurate and affordable in vitro platform for drug development and personalized medicine. In 2013, Ingber’s work on Organs-on-Chips was honored by the NC3Rs Annual Award from the National Centre for the Replacement, Refinement, and Reduction of Animals in Research, London; in 2015, this technology was named Design of the Year by the London Design Museum and was also acquired by the Museum of Modern Art (MoMA) in New York City for its permanent design collection; and in 2016, they were named one of the Top 10 Emerging Technologies of 2016 by the World Economic Forum.
## PROGRAM

**Tuesday 24 August 2021 - Day 2**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6.30 - 8.30 PM</strong></td>
<td><strong>TUE-2</strong> <strong>S143</strong> <strong>/Open Science and Transparency in Animal-Based Research</strong></td>
<td>Open Science is the umbrella term for efforts aimed at achieving more openness in science. In principle, results and data of publicly funded research should be made freely available at no cost. Especially in animal-based research, open science and transparency also have important ethical dimensions. What responsibilities do funders, journal editors, and reviewers have to make this possible? What responsibility do scientists have to create more openness in science? In this session, we will ask different stakeholders to present their view on Open Science and Transparency in animal-based research and invite the audience to discuss with the experts.</td>
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<tr>
<td><strong>6.30 PM</strong></td>
<td><strong>ID 110</strong> <strong>/COMMUNICATING ANIMAL RESEARCH: A PLOS ONE PERSPECTIVE</strong></td>
<td>Alejandra Clark, Public Library of Science</td>
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<tr>
<td><strong>6.30 PM</strong></td>
<td><strong>ID 351</strong> <strong>/DORA DECLARATION: OPEN SCIENCE AND ITS IMPACT ON THE ASSESSMENT OF ANIMAL RESEARCH</strong></td>
<td>Ilas de Waard, ZonMW - The Netherlands Organisation for Health Research and Development</td>
</tr>
<tr>
<td><strong>6.30 PM</strong></td>
<td><strong>ID 1131</strong> <strong>/INCREASING TRANSPARENCY AND REPRODUCIBILITY OF ANIMAL RESEARCH: FOCUS ON OPEN SCIENCE</strong></td>
<td>A. Olsæn, University of Porto</td>
</tr>
<tr>
<td><strong>6.45 PM</strong></td>
<td><strong>ID 586</strong> <strong>/EDITORS’ MORAL OBLIGATIONS - PROFIT, REGULATION AND VIRTUE</strong></td>
<td>Gavin Jarvis, University of Cambridge</td>
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<tr>
<td><strong>8.00 PM</strong></td>
<td><strong>SESSION 143 Q&amp;A</strong></td>
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<td>6.30 PM</td>
<td><strong>S11</strong> Flexible, efficient and performance-driven in-house method validation responding to current regulatory challenges for identifying human thyroid disruptors</td>
<td>The OECD has published the international guidance document on Good In Vitro Method Practices (GIVIMP) to support method developers and end-users working in academic, industry and government laboratories across all 36 OECD member countries and beyond. In harmonisation efforts of the new generation of mechanistic in vitro methods responding to current regulatory challenges, applying GIVIMP during the in vitro method development stage and in-house validation assessing the method's performance will help improve the quality and reliability of generated data needed to support safety decisions and in challenging fields like the thyroid disruptor field. The European Commission is funding and coordinating a large scale efforts to obtain a set of mechanistically informative alternative methods to detect chemicals that disrupt normal thyroid hormone function, in collaboration with the European Union Network of Laboratories for the Validation of Alternative Methods (EU-NetVaM) and the method developers. An initial set of methods has been identified as candidates taking primarily into account the information reported in an OECD scoping document on in vitro and ex vivo methods for the identification of modulators of thyroid hormone signaling (OECD no. 207), but also in an OECD Detailed Review Paper (OECD No. 129), and feedback received at various Expert Group meetings. Furthermore, research efforts are funded by the European and International funding programmes to support the necessary development of new methods and approaches in this particular field to complement the information gaps identified. The symposium will illustrate how global collaboration, harmonisation and interdisciplinary efforts and increasing common awareness of common agreed regulatory information needs can deliver and harmonisation and interdisciplinary efforts and increasing common awareness of common agreed regulatory information needs can deliver flexible, efficient and performance-driven in-house methods to respond to current regulatory challenges for identifying human thyroid disruptors. <strong>S. Coecke, EURL ECVM, European Commission Joint Research Centre</strong></td>
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<tr>
<td>6.45 PM</td>
<td><strong>S183</strong> Alternative approaches and predictive methods to fish toxicity testing</td>
<td>Fish, as representatives of one of the trophic levels, are key aquatic organisms for environmental risk assessment. However, they fall into the scope of several international regulations for the protection of animals used for scientific purposes. Replacing animal testing for the environmental safety assessment in various sectors therefore faces significant challenges when addressing issues such as short- and long-term toxicity to fish, endocrine modulation and bioaccumulation. This session will present the promising methodologies and progress made in these areas over the past decade, and highlight issues associated with fish testing and the potential of alternative approaches to predict relevant endpoints.</td>
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PROGRAM
Tuesday 24 August 2021 - Day 2

6.30 - 8.30 PM TUE-1 S205
A Virtual Human Platform for Safety Assessment

The Virtual Human Platform for Safety Assessment (VHP4Safety) is a new integrated approach for assessing safety, based on quantitative information of human biology, toxicology and exposure. The VHP4Safety will form an overarching platform integrating high quality data from existing databases and algorithms, as well as new data acquired within the project. During this session we dive into the topic of predictive modelling, data science, exposure assessment and advanced human in vitro models, to design a platform that reflects the Virtual Human and address the emerging societal challenge towards transition to animal-free safety assessment completely based on human data.

Session chair
T. Hartung, John Hopkins

Time  Abstract Speakers
6.30 PM ID 1128 IN SILICO MEDICINE: BRINGING THE COMMUNITY TOGETHER AND THE FIELD FORWARD
Liesbet Geris, University of Liege

7.15 PM ID 1109 TOXICOLOGICAL MECHANISTIC INFERENCE FROM GENE EXPRESSION ASSAYS WITH MECHSPY
Ruchir Shah

7.30 PM ID 463 NETWORK INTEGRATION AND MODELLING OF DYNAMIC DRUG RESPONSES AT MULTI-OmICS LEVELS
Ralf Herwig

7.45 PM ID 1000 COMPARING AND INTERPRETING TOX21 DATA ANALYSIS APPROACHES
Agnes Karmaus

8.00 PM SESSION 205 Q&A

6.30 - 8.00 PM YOU-WC11 - SPEED COLLABORATING

This is a unique opportunity for first-time attendees, but also other early career scientists to connect, ask questions, and exchange experiences. Sign up for the Speed Collaborating to get to know other early career scientists directly from the beginning, this is meant to further improve your personal congress experience, especially in this challenging time.

WC11 TALKSHOW LIVE FROM THE STUDIO IN MAASTRICHT

9.00 - 10.00 PM WC11 TV - Talkshow

Talkshow 1 will address the topic of the Presence and Future of the Next-Generation Risk Assessment Approach. It has been 8 years since the EU ban on animal testing for cosmetic ingredients has been applied. In addition, the Scientific Committee on Consumer Safety (SCCS) has published a new evaluation and a 11th revision report.
**Program**

**Wednesday 25 August 2021 - Day 3**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>3.00 PM</td>
<td>ID 914</td>
<td>FINDING ALTERNATIVES USING TEXT BASED ARTICLE CLASSIFICATION</td>
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<td>Wynand Alkema, TenWise BV; Hanze University of Applied Sciences</td>
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<td>3.30 PM</td>
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<td>BENEFITS, CHALLENGES AND EMERGING TECHNOLOGIES FOR PRECLINICAL SYSTEMATIC REVIEWS</td>
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<td>Nadia Soliman</td>
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<td>3.45 PM</td>
<td>ID 58</td>
<td>A MACHINE-LEARNING AND SYSTEMS BIOLOGY STRATEGY REQUIRES SYSTEMATIC REVIEW TO DEVELOP ANIMAL REPLACEMENT ALTERNATIVES. Brett Libby, NCEPH, Research School of Population Health, The Australian National University, Canberra, Australia; SYRCLE, Department of Health Evidence, Radboud UMC, Nijmegen, The Netherlands</td>
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<tr>
<td>4.00 PM</td>
<td>ID 915</td>
<td>A FUNDER’S ROLE IN STIMULATING TRANSPARENCY IN 3RS RESEARCH</td>
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<td>Erica van Oert, ZonMw - The Netherlands Organisation for Health Research and Development</td>
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<tr>
<td>4.30 PM</td>
<td></td>
<td>SESSION 34 Q&amp;A</td>
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</tbody>
</table>

**Program**

**Wednesday 25 August 2021 - Day 3**

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<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>3.00 PM</td>
<td>ID 916</td>
<td>DEVELOPMENT OF COMPLEX HUMAN ORGANOID TECHNOLOGY FOR VIRAL INFECTIONS, AN EUROPEAN APPROACH</td>
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<td>Adithya Sridhar, Amsterdam UMC</td>
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<td>3.15 PM</td>
<td>ID 629</td>
<td>TRANSLATING ANIMAL MODEL RESULTS TO HUMAN DISEASE</td>
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<td>Giulia Moreni, Amsterdam UMC</td>
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<td>3.30 PM</td>
<td>ID 821</td>
<td>HUMAN GUT ORGANOIDS FOR SARS-COV2 AND ENTEROVIRUS RESEARCH</td>
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<td>Ikramane Aknouch, Amsterdam UMC</td>
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<td>3.45 PM</td>
<td>ID 1051</td>
<td>BRAIN ORGANOIDS AS ANIMAL FREE MODELS FOR VIROLOGY</td>
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<td>Josse Depla, Amsterdam UMC</td>
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<td>4.00 PM</td>
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<td>SESSION 152 Q&amp;A</td>
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</tbody>
</table>
## PROGRAM
**Wednesday 25 August 2021 - Day 3**

### Challenges of Non-Animal Approaches for Food Safety & Nutrition in the 21st Century: From Inception to Application

This session proposal aims to discuss:
- Different applicable legislations for non-animal approaches in the food sector
- The way food scientists approach animal and animal-free studies
- Benchmarking of non-animal approaches in different industry sectors
- Real-life risk assessment application in food safety and nutrition

**Session Chair**
Marcel Leist, Center for Alternatives to Animal Testing in Europe (CAAT) - University of Konstanz

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>3.00 PM</td>
<td>ID 705 APPLICABLE LEGISLATION FOR NON-ANIMAL APPROACHES IN THE FOOD SYSTEM</td>
<td>Katrin Schutte, European Commission</td>
</tr>
<tr>
<td>3.30 PM</td>
<td>ID 51 ANIMAL-FREE STRATEGIES IN FOOD SAFETY &amp; NUTRITION</td>
<td>Alie de Boer, Food Claims Centre Venlo, Campus Venlo, Maastricht University</td>
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<tr>
<td>3.45 PM</td>
<td>ID 788 THE WINDY ROAD TO THE USE OF NON-ANIMAL APPROACHES FOR REGULATIONS OF CHEMICALS</td>
<td>Robert Landsiedel, BASF SE</td>
</tr>
<tr>
<td>4.00 PM</td>
<td>ID 1039 WHAT ARE THE STRATEGIES THAT CAN BE USED NOW IN FOOD SAFETY RISK ASSESSMENT AVOIDING ANIMAL TESTING?</td>
<td>Alan Boots, National Heart &amp; Lung Institute, Imperial College London</td>
</tr>
<tr>
<td>4.15 PM</td>
<td>ID 717 IN VITRO COCULTURE MODEL (H-CLAT/RIHE) COMPOSED OF THP-1 CELLS AND 3D RECONSTRUCTED HUMAN EPIDERMIS TO ASSESS ACTIVATION AND MATURATION OF DENDRITIC CELLS</td>
<td>Brunhilde Blömeke, Trier University</td>
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<tr>
<td>4.30 PM</td>
<td>SESSION 70 Q&amp;A</td>
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### Decision making in non-animal cosmetic safety assessment

There has been significant progress globally over recent years in advancing the science that underpins non-animal cosmetic safety assessment that has facilitated the ability to perform cosmetic safety assessment while using no new animal data. The Animal-Free Safety Assessment (AFSA) Cosmetics collaboration between Humane Society International, industry partners and other interested groups was created to facilitate implementation of robust consumer safety decisions by government health authorities, manufacturers of cosmetic products and ingredients, CROs and service providers, and other stakeholders, with the objective of transitioning the global industry fully away from reliance on new animal data by 2023. Presentations in this session will introduce the project and cover several aspects of the risk assessment process including established and developing science areas.

**Chair**
P. Russell, Unilever
Can non-animal models identify environmental endocrine disruptors?

Non-animal test systems are widely used in toxicology to characterize the biological properties of chemicals. In particular, in vitro assays allow identifying mechanisms of action, including endocrine activity, that are relevant for humans. The new European regulation on the identification of endocrine disruptors requires that potential endocrine properties of chemicals are investigated with regard to both human health and the environment. However, in vitro test systems are rarely available to investigate endocrine activity in non-mammalian environmental species (e.g., fish, amphibians, birds). As a consequence, the implementation of the new European regulation on endocrine disruptors results in the use of huge numbers of animal in testing. Recently, embryo assays have been developed as non-animal alternatives to chronic tests on fish and amphibians. The workshop will address various aspects of the use of non-animal tests for the identification of environmental endocrine disruptors including the latest technological developments, advantages and limitations of non-animal tests, regulatory acceptance of embryo assays, and the societal demand for reducing tests on animals.

Sponsored by Bayer

Session chair
L. Lagadic, Bayer AG

Time Abstract Speakers
3.00 PM ID 594 IDENTIFICATION OF ENDOCRINE DISRUPTING CHEMICALS IN FISH EMBRYOS S. Scholz, Helmholtz Zentrum für Umweltforschung (UFZ)
3.15 PM ID 607 USE OF NON-ANIMAL MODELS FOR THE HAZARD IDENTIFICATION OF ENDOCRINE DISRUPTING PROPERTIES: A REGULATORY PERSPECTIVE M. Arena, European Food Safety Authority (EFSA)
3.30 PM ID 255 REDUCING, REPLACING AND REFINING AQUATIC VERTEBRATE TESTING IN THE IDENTIFICATION OF ENDOCRINE DISRUPTORS B. Labram, NCIRS
3.45 PM ID 610 THE USE OF NON-ANIMAL MODELS IN REGULATORY EVALUATION OF ENVIRONMENTAL ENDOCRINE DISRUPTORS - AN INDUSTRY PERSPECTIVE L. Lagadic, Bayer AG, Crop Science Division
Innovative Technologies
Disease
Ethics, Welfare 
and Regulation
Safety

PROGRAM
Wednesday 25 August 2021 - Day 3

5.00 - 6.30 PM  PLENARY SESSIONS

5.00 - 5.15 PM WC11 TV live from the studio

5.15 - 6.15 PM KEYNOTE:

DR. JASON EKERT
GlaxoSmithKline

Dr. Jason Ekert has been head of the Complex In Vitro Models (CIVM) group for the last three years in the In Vitro In Vivo Translation department in the Research organization at GlaxoSmithKline. He leads an integrated enterprise strategy for sustained, portfolio-driven growth in R&D applications of complex human-relevant and translatable complex in vitro models (eg Spheroids, Organoids, Microphysiological systems and bioprinting).

The CIVM group drives the coordination and prioritization of development and integrated use of complex in vitro technologies for target identification/validation, efficacy, safety and DMPK studies. He has led a cross-functional matrix team for the last three years at GSK that is a multi-disciplinary team (Scientists that span from target ID/Validation, screening, lead optimization, safety, DMPK and the research units) which coordinates activities, collaborates externally and identifies ready soon platforms that can positively impact the portfolio. He's the vice-chair elect for the IQ-MPS affiliate. Dr Ekert received his PhD in Medical Science from Adelaide University in Australia. He performed post-doctoral training at the University of California, Davis and Coriell Institute for Medical Research.

Before coming to GlaxoSmithKline Dr Ekert worked for 11 years at Janssen BioTherapeutics in early biotherapeutic drug discovery in target discovery, drug validation and mechanism of action studies applying 3D cell cultures, induced pluripotent stem cells and primary cells in complex cell-based assays across multiple therapeutic areas.

6.15 - 6.30 PM WC11 TV live from the studio
**PROGRAM**

**Wednesday 25 August 2021 - Day 3**

**6.30 - 8.30 PM WED-2 S16**

**Focus on Severe Suffering**

All laboratory animal suffering is a concern, but the RSPCA believes that reducing and avoiding severe suffering should be a top priority. There are a number of reasons to do this: (i) the ethical and animal welfare benefits of reducing suffering, (ii) the legal requirement to minimise suffering set out in legislation, and (iii) the scientific benefits – it is acknowledged that good science goes hand in hand with good welfare. This symposium will focus on the work of the RSPCA to reduce and ultimately end severe suffering, as well as showcasing practical examples from invited speakers.

**Session chair**

P. Hawkins, RSPCA Animals in Science Department

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.30 PM</td>
<td>INTRODUCTION - FOCUS ON SEVERE SUFFERING</td>
<td>P. Hawkins, RSPCA</td>
</tr>
<tr>
<td>6.45 PM</td>
<td>COMBINING MATHEMATICS WITH MEDICINE TO MAKE BETTER USE OF ANIMAL DATA: SEPSIS CASE STUDY</td>
<td>M. Nandi, King's College London</td>
</tr>
<tr>
<td>7.00 PM</td>
<td>POTENTIAL REFINEMENT OF ANIMAL MODELS OF NEUROPATHIC AND INFLAMMATORY PAIN</td>
<td>K. Abelsson, University of Copenhagen</td>
</tr>
<tr>
<td>7.15 PM</td>
<td>MONITORING OF SEVERITY AND IMPLEMENTATION OF REFINEMENT MEASURES IN DSS INDUCED COLITIS IN MICE</td>
<td>P. Jirkhof, University of Zurich</td>
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<tr>
<td>7.30 PM</td>
<td>HUMANE ENDPOINTS, TAILOR MADE</td>
<td>N. Verhave, Universiteit Leiden</td>
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<tr>
<td>7.45 PM</td>
<td>AVOIDING MORTALITY DURING PROCEDURES</td>
<td>P. Hawkins, RSPCA</td>
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<tr>
<td>8.00 PM</td>
<td>SESSION 16 Q&amp;A</td>
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</tr>
</tbody>
</table>

**PROGRAM**

**Wednesday 25 August 2021 - Day 3**

**6.30 - 8.30 PM WED-2 S160**

**Human Organs-on-Chips: Advancing Regulatory Science through Innovation**

A growing number of assays based on microphysiological systems (MPS) are being adopted by the pharmaceutical industry to evaluate new drugs and therapies. Data generated by these types of systems are increasingly used in portfolio decision-making thus reducing the use of laboratory animals. Simultaneously, scientists working in regulatory authorities have been actively involved in MPS-based research. The session aims to provide a perspective of how regulatory bodies from US, Europe, China, Russia and South Korea towards the replacement of laboratory animal-based assays and guidelines by qualified MPS-based assays.

**Session chair**

S. Fitzpatrick, US Food and Drug Administration and S. Beken, Federal Agency for Medicines and Health Products (FAMHP)

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
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<tbody>
<tr>
<td>6.45 PM</td>
<td>DEVELOPING PERFORMANCE BASED QUALIFICATION CRITERIA FOR ORGANS ON A CHIP - US FDA PERSPECTIVE</td>
<td>Suzanne Fitzpatrick, US Food and Drug Administration, Center for Food Safety and Applied Nutrition</td>
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<tr>
<td>7.00 PM</td>
<td>DEVELOPING PERFORMANCE BASED QUALIFICATION CRITERIA FOR ORGANS ON A CHIP - EU PERSPECTIVE</td>
<td>Sonja Beken, Federal Agency for Medicines and Health Products (FAMHP)</td>
</tr>
<tr>
<td>7.15 PM</td>
<td>THE POTENTIAL OF MICROPHYSIOLOGICAL SYSTEMS TO ENTER THE CHANGING RUSSIAN DRUG APPROVAL REGULATION ENVIRONMENT</td>
<td>A. Tonevitsky, Higher School of Economics</td>
</tr>
<tr>
<td>7.30 PM</td>
<td>CHINESE PERSPECTIVE OF THE IMPLEMENTATION OF ORGAN-ON-CHIP-BASED ASSAYS INTO THE REGULATORY LANDSCAPE</td>
<td>Xiaobing Zhou, National Center for Safety Evaluation of Drugs, National Institutes for Food and Drug Control</td>
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<td>7.45 PM</td>
<td>3D TISSUE CHIPS AND MICROPHYSIOLOGICAL SYSTEMS: KOREAN EFFORTS FROM DEVELOPMENT TO REGULATORY ADAPTATION</td>
<td>S. Kim, Seoul National University Hospital</td>
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<tr>
<td>8.00 PM</td>
<td>SESSION 160 Q&amp;A</td>
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</table>
### PROGRAM

**Wednesday 25 August 2021 - Day 3**

#### 6.30 - 8.30 PM WED-2

**S60**

**New Approach Methods in AgroChemical Development and Regulatory Decisions**

New approach methods are being designed and applied to answer risk assessment and risk management questions. They are also being developed to inform data needs for chemical safety evaluation. There is also the potential to eliminate redundant and unnecessary studies through waiving repeat dose studies when adequate information is available to assess human health risk. The symposium will present a framework for fit for purpose evaluation of new approach methods, the application of new approach methods for predicting developmental toxicity, and the US EPA’s successful program to waive repeat dose studies which has saved several hundred thousands of animals.

**Sponsored by Syngenta**

**Session chair**
Douglas Wolf, Syngenta Crop Protection and Monique Perron, United States Environmental Protection Agency

<table>
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<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract Title</th>
<th>Speakers</th>
</tr>
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<tbody>
<tr>
<td>6.30 PM</td>
<td>ID 855</td>
<td>AN EVALUATION FRAMEWORK FOR NEW APPROACH METHODOLOGIES (NAMS) FOR HUMAN HEALTH SAFETY ASSESSMENT</td>
<td>Stanley Parish, Health and Environmental Sciences Institute</td>
</tr>
<tr>
<td>7.00 PM</td>
<td>ID 887</td>
<td>APPLICATION OF NEW APPROACH METHOD FOR DETERMINING DEVELOPMENTAL TOXICITY</td>
<td>Richard Currie, Syngenta</td>
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<tr>
<td>7.30 PM</td>
<td>ID 853</td>
<td>AN INTEGRATED APPROACH TO TESTING AND ASSESSMENT FOR EVALUATING INHALATION RISK</td>
<td>Douglas Wolf, Syngenta</td>
</tr>
<tr>
<td>8.00 PM</td>
<td>ID 68</td>
<td>WAIVING REPEAT DOSE STUDIES WHILE CONFIDENTLY PROTECTING HUMAN HEALTH FROM EXPOSURE TO AGRICULTURAL CHEMICALS</td>
<td>Monique Perron, United States Environmental Protection Agency</td>
</tr>
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#### 6.30 - 8.30 PM WED-3

**S173**

**Culture of Care - a culture driven, pro-active approach towards improving standards**

The purpose of the workshop is to demonstrate that a culture driven approach will deliver more and better outcome in terms of continuously optimised animal welfare instead of a reactive approach of merely reacting to problems when they arise. Emphasis should be on examples of improved animal welfare because the initiative was driven by a culture of care.

**Session chair and co-chair**
S. Robinson, Astra Zeneca and T. Bertelsen - Novo Nordisk

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<thead>
<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract Title</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>6.30 PM</td>
<td>ID 155</td>
<td>A SIMPLE-TO-USE MODEL TO WORK PURPOSEFUL AND FOCUSED WITH CULTURE OF CARE</td>
<td>T. Bertelsen - Novo Nordisk</td>
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<tr>
<td>6.45 PM</td>
<td>ID 815</td>
<td>A FIVE CATEGORY FRAMEWORK FOR IMPLEMENTING CULTURE OF CARE</td>
<td>S. Robinson, Astra Zeneca</td>
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<tr>
<td>7.00 PM</td>
<td>ID 678</td>
<td>CULTURE OF CARE AND GOVERNANCE: TWO SIDES OF THE SAME COIN</td>
<td>J. Prins, The Crick Institute</td>
</tr>
<tr>
<td>7.15 PM</td>
<td>ID 138</td>
<td>CULTURE OF CARE AT NOVARTIS - THE PATH FOR BETTER SCIENCE</td>
<td>B. Ledermann, Novartis</td>
</tr>
<tr>
<td>7.30 PM</td>
<td>ID 846</td>
<td>THE ONGOING JOURNEY TO CHAMPION AND ENHANCE A CULTURE OF CARE</td>
<td>A. White, GSK</td>
</tr>
<tr>
<td>7.45 PM</td>
<td>ID 549</td>
<td>INCLUSIVE CULTURE OF CARE AT A GLOBAL CRO: A NECESSARY ADJUNCT TO GOVERNANCE</td>
<td>Ghislaine Poirier</td>
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<tr>
<td>8.00 PM</td>
<td></td>
<td>SESSION 173 Q&amp;A</td>
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**PROGRAM**
**Wednesday 25 August 2021 - Day 3**

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<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>6.30 PM</td>
<td>ESTABLISHMENT OF A DEVELOPMENTAL NEUROTOXICANT SCREENING USING SOX1-GFP MOUSE EMBRYONIC STEM CELLS</td>
<td>Weida Tong, NCTR, FDA</td>
</tr>
<tr>
<td>6.45 PM</td>
<td>AN INTEGRATED APPROACH ALTERNATIVE FOR SCREENING REPRODUCTIVE, DEVELOPMENTAL AND ENDOCRINE DISRUPTING ACTIVITY WITH EX VIVO WHOLE RAT EMBRYO CULTURE</td>
<td>Eui-Bae Jeung</td>
</tr>
<tr>
<td>7.00 PM</td>
<td>AN ANALYSIS OF THE LIMITATIONS AND UNCERTAINITIES OF IN VIVO DEVELOPMENTAL NEUROTOXICITY TESTING AND ASSESSMENT TO IDENTIFY THE POTENTIAL FOR ALTERNATIVE APPROACHES</td>
<td>Martin Paparella</td>
</tr>
<tr>
<td>7.15 PM</td>
<td>COLINEAR HOX GENE EXPRESSION IN THE NEURAL EMBRYONIC STEM CELL TEST (ESTN) DEFINES ITS BIOLOGICAL DOMAIN AND REVEALS EFFECTS OF COMPOUNDS</td>
<td>Victoria de Leeuw</td>
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<tr>
<td>7.30 PM</td>
<td>IN VITRO SCREENING FOR DEVELOPMENTAL NEUROTOXICITY BY USING A HUMAN CELL-BASED TESTING BATTERY: A CASE STUDY OF FLAME RETARDANTS</td>
<td>Melanie Pahl</td>
</tr>
<tr>
<td>7.45 PM</td>
<td>AN INTER-LABORATORY CASE STUDY TO HARMONIZE ZEBRAFISH LIGHT-DARK TRANSITION TEST TO PREDICT DEVELOPMENTAL NEUROTOXICITY</td>
<td>Celia Rodriguez</td>
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<tr>
<td>8.00 PM</td>
<td>SESSION 309 Q&amp;A</td>
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Every product Unilever makes must be safe for people to use and safe for our planet. We believe that animal experiments should not be used to make sure that are products are safe.

Unilever started to develop non-animal approaches to assess the safety of its products and ingredients over 40 years ago and we are committed to using what we have learnt to help accelerate use of new science and technology in chemical and product safety assessment, to ultimately replace the need for animal test data.

Our ability to innovate using non-animal safety assessment approaches is underpinned by scientific partnerships with over 70 leading research teams globally to develop and apply new capability. We look to openly share the experience gained from these collaborations through publications, presentations and through our website (tt21c.org/resources/).

In the spirit of this goal, we would like to welcome you to the 11th World Congress on Alternatives to Animal Use in the Life Sciences and invite you to come and meet us at one of our events:

- Oral & poster presentations throughout the Congress
- Unilever - sponsored sessions - live panel discussions & presentations throughout the congress and YOU-WC11 welcome reception
- Congress booth for more information and any questions you may have

Everything Unilever shares during the WC11 is available for download here: https://tt21c.org/events/WC11/
A global movement to improve science using animal-free antibodies

We are on the brink of a sea change on antibody production. In Europe, the ECVAM Scientific advisory committee has endorsed the scientific validity of replacement methods not requiring animal immunization and the U.S. NICEATM aims to improve research quality and reproducibility by accelerating their development and use. No longer must we accept the scientific shortcomings of animal-derived antibodies. Considering the $80 billion scale of the antibodies industry, importance to all scientific disciplines, vast animal use and commitment by government authorities to the implementation of Directive 2010/63/EU, the landmark movement to animal-free sequence-defined antibodies will have an enormous global influence. We are on the brink of a sea change on antibody production. In Europe, the ECVAM Scientific advisory committee has endorsed the scientific validity of replacement methods not requiring animal immunization and the U.S. NICEATM aims to improve research quality and reproducibility by accelerating their development and use. No longer must we accept the scientific shortcomings of animal-derived antibodies. Considering the $80 billion scale of the antibodies industry, importance to all scientific disciplines, vast animal use and commitment by government authorities to the implementation of Directive 2010/63/EU, the landmark movement to animal-free sequence-defined antibodies will have an enormous global influence.

Session chair and co-chair
A. Gray, AFABILITY & University of Nottingham and K. Groff, PETA
International Science Consortium Ltd

Time Abstract Speakers
3.00 PM ID 118 BARRIERS AND CHALLENGES FACING THE REPLACEMENT OF ANIMAL-DERIVED ANTIBODIES (ADAS) Alison Gray, AFABILITY
3.15 PM ID 726 SCIENTIFIC VALIDITY OF NON-ANIMAL-DERIVED ANTIBODIES Joao Barroso, European Commission, Joint Research Centre, Ispra (VA), Italy
3.30 PM ID 1 ANIMAL-FREE MULTICLONAL ANTIBODY GENERATION AS A REPLACEMENT FOR POLYCLONAL ANTIBODIES
Stefan Dübel, Technische Universität Braunschweig
3.45 PM ID 907 RECOMBINANT ANTIBODIES: A COMPLETE TOOLBOX FOR ACADEMIA
Pierre Cosson, University of Geneva, Faculty of Medicine
4.00 PM ID 127 RECOMBINANT ANTIBODY TECHNOLOGY: TAKING ANTIBODIES FROM BENCH TO BEDSIDE
Lia Cardarelli, Toronto Recombinant Antibody Centre; University of Toronto
4.15 PM ID 101 STRATEGIZING TO OPTIMIZE THE DEVELOPMENT AND USE OF ANIMAL-FREE ANTIBODIES IN THE U.S.
Katherine Groff, PETA Science Consortium International e.V.
4.30 PM SESSION 118 Q&A
Innovative approaches for CNS research - from brain organoids to new single cell culture methods

A functioning central nervous system (CNS) is key for living, and ageing is a major risk factor of dysfunction. With the increase in human lifespan the incidence of neurodegenerative diseases is rising. There is a demand for good models for neurodegenerative diseases, as current in vivo models have limitations and ethical concerns. Modelling the CNS in vitro is, however, challenging. Recent discoveries in neuroscience, such as the breakthroughs of induced pluripotent stem cell technology, 3D-organotypic cultures and organs-on-chip, move the field forward. This workshop will overview how scientists are embracing new cutting-edge technologies and provide a guidemap for future developments.

Session chair
J. Bajramovic, Biomedical Primate Research Centre

3.00 PM ID 850 FROM MICROPHYSIOLOGICAL TO MICROPATHOPHYSIOLOGICAL SYSTEMS TO STUDY NEUROTOXICITY AND CNS DISEASES
L. Smirnova, Johns Hopkins

3.30 PM ID 578 TRANSCRIPTOME GUIDED APPROACHES TO MIMIC HOMEOSTATIC ADULT MICROGLIA IN CULTURE
R. Timmerman, Biomedical Primate Research Centre

4.00 PM ID 1022 NEW WAYS OF NEUROTOXICITY TESTING IN PRE-CLINICAL DRUG DEVELOPMENT
S. Kustermann, Roche

3.00 PM ID 575 ROUND TABLE: INDUSTRY AND PUBLIC SECTOR PARTNERSHIPS IN EDUCATION TO FOSTER THE IMPLEMENTATION OF ALTERNATIVE METHODS ALTERNATIVES TO ANIMALS IN EDUCATION AND RISK ASSESSMENT: AN OVERVIEW WITH SPECIAL REFERENCE TO INDIAN CONTEXT
Akbarsha, Mohammad A., Society for Alternatives to Animal Experiments-India (SAAE-I)

3.15 PM ID 793 BRAZIL IS ON: ANIMAL TESTING BAN AND AVAILABLE OECD TG IN BRAZIL
L. Balottin, National Institute of Metrology, Quality and Technology (INMETRO)

3.30 PM ID 496 WAYS TO IMPROVE THEIR EFFECTIVENESS AND RECOGNITION
F. Busquet, Altertox Academy

3.45 PM ID 591 THE DEVELOPMENT OF ALTERNATIVE METHODS IN CHINA AND THE ROLE OF THE INDUSTRIES
C. Shujun, Shanghai Jiao Tong University

4.00 PM ID 670 FEEDBACK FROM 8 YEARS OF TRAINING TO ALTERNATIVE METHODS IN INDUSTRIAL AND ACADEMIC CONTEXTS
C. Pellevoisin, EPI SKIN Academy

4.30 PM SESSION 177 Q&A

4.30 PM SESSION 195 Q&A
Several initiatives have generated a wealth of non-animal data, e.g., new approach methodologies (NAMs). In 2007, the American National Academy of Science called for moving away from measuring apical endpoints to considering upstream events. Regulatory changes like in the cosmetics sector in Europe have incentivized such initiatives. NAMs have been used in different decision-making contexts. Biological effects at the molecular, cellular and/or tissue level compared to internal concentrations based on use scenarios yielded points of departure protective of human health and conservative. The session covers cases with points of departure from NAMs with a 30 min discussion highlighting opportunities and limitations of such approaches.

Session chair and co-chair:
R. Thomas, NCCT - US EPA and G. Ouedraogo - L’Oreal

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<th>Time</th>
<th>Abstract ID</th>
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<tr>
<td>3.00 PM</td>
<td>ID 742</td>
<td>Screening to Assessment: Building Confidence in Bioactivity Points of Departure at Health Canada T. Barton Maclaren, Health</td>
</tr>
<tr>
<td>3.15 PM</td>
<td>ID 52</td>
<td>Cosmetic Europe Case Studies Exploring Alternatives to Repeated Dose Systemic Toxicity Testing C. Mahony, P&amp;G</td>
</tr>
<tr>
<td>3.30 PM</td>
<td>ID 604</td>
<td>High Throughput Transcriptomics to Derive Mode-of-Action and Potency Information to Support Read Across Approaches B. van de Water, University of Leiden</td>
</tr>
<tr>
<td>3.45 PM</td>
<td>ID 49</td>
<td>Applying In Vitro to In Vivo Extrapolation to NAM-Derived PODs N. Kleinsteuer</td>
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<tr>
<td>4.00 PM</td>
<td>ID 444</td>
<td>Application of Newly Validated Route-Specific In Vitro Genotoxicity Assays to Support the Safety Assessment of Cosmetic Ingredients R. Fautz</td>
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<tr>
<td>4.30 PM</td>
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<td>Session 181 Q&amp;A</td>
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PROGRAM
Thursday 26 August 2021 - Day 4

5:00 - 5:15 PM WC11 TV live from the studio

5:15 - 6:15 PM KEYNOTE:

PROF. DR. MALCOLM MCLEOD
University of Edinburgh

Malcolm Macleod is Professor of Neurology and Translational Neurosciences at the University of Edinburgh, member of the UK Commission for Human Medicines and the UK Reproducibility Network. He also leads the European Quality in Preclinical Data IMI project and the SE Scotland Stroke Research Network. He was co-CI of the EuroHYP trial of brain cooling for acute stroke and is UK coordinator for the PRECIOUS trial of preventing complications following stroke.

Since founding the Collaborative Approach to Meta-analysis and Review of Animal Data form Experimental Studies (CAMARADES) in 2004 his research has largely focussed on how best to increase the value of biomedical research. This has included work with funders, journals (including randomised studies of different approaches to improve quality, and the proposed MDAR Minimum Standards Framework) and most recently with institutions (recently appointed Research Improvement lead at the University of Edinburgh). He led the development and implementation of the SyRF platform (app.syrforg.uk) which supports systematic reviews of in vivo research.

Since 2007 he has been clinical lead for Neurology at NHS Forth Valley. For more information visit: https://orcid.org/0000-0001-9187-9839 and for more information about his talks visit: https://osf.io/de6qh/

Warlow’s Stroke: Practical Management (ISBN: 978-1-118-49222-2) for more information about his talks visit: https://osf.io/de6qh/

PARALLEL SESSION THU-2

Implementing the 3Rs in Safety Assessment and Drug Development

The 3Rs represent a framework for the advancement of animal welfare by supporting the Reduction, Refinement, and Replacement of animals within scientific research. While specific government regulations aim to ensure minimum animal welfare standards, the scientific community has a responsibility to actively investigate refinement and alternatives to animal use and to minimize the number of animals used, along with promoting animals’ wellbeing in the research environment and for procedures that are performed. Although animal use is often mandated or deemed necessary for research and safety testing, there are opportunities to implement 3Rs improvements within current toxicology testing strategies and individual study designs. Improvements in data quality and increased predictivity to human outcomes can facilitate the provision of new therapies to benefit patient health. The main objective of this session is to highlight some of the different approaches used to advance the science of the 3Rs in drug development, bringing together global colleagues from various sectors and collaborative projects within the toxicology field. This session will summarize the current understanding, recent advancements and data from retrospective analyses; and introduce emerging technologies to challenge you to consider how best to design your preclinical toxicology and efficacy studies to maximize data quality and clinical relevance whilst promoting animal welfare.

We posit that a well-defined development strategy includes a suite of tools to help better predict clinical translatability. These may include silico modeling or in vitro tests replacing animal experiments, or as a supplement to reduce subsequent animal use. Emerging technologies, digital and non-digital, provide an opportunity for identification of novel clinically relevant endpoints and increased understanding of animal models. When animal models are required modifications in study designs including endpoints and real-time data access can limit animal use while maximizing scientific utility, whilst refinements in animal housing, welfare and data driven enrichment that decrease or eliminate pain and/or distress can improve data quality.

Session chair
D. W. Lee, Genentech

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<th>Time</th>
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<tr>
<td>6:30 PM</td>
<td>ID 899</td>
<td>INCREASE PREDICTIVITY AND TRANSLATABILITY FROM ANIMAL MODELS - UNDERSTANDING HOW DIFFERENT FACTORS CONTRIBUTE TO (R) REPRODUCIBILITY</td>
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<tr>
<td>6:45PM</td>
<td>ID 359</td>
<td>REIMAGINING PRECLINICAL STUDIES THROUGH DIGITAL TRANSFORMATION; LEVERAGING COMPUTER VISION, MACHINE LEARNING, MIXED REALITY &amp; INFORMATICS PLATFORMS TO MAXIMIZE DATA QUALITY AND CLINICAL RELEVANCE OF PRECLINICAL STUDIES</td>
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<tr>
<td>7:00 PM</td>
<td>ID 732</td>
<td>ADVANCED HUMAN CELL MODELS TO SUPPORT SAFETY ASSESSMENT OF BI-SPECIFIC ANTIBODIES</td>
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<td>7:15 PM</td>
<td>ID 408</td>
<td>APPLYING THE 3RS WITHIN REGULATORY TOXICOLOGY STUDIES IN DRUG DEVELOPMENT</td>
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<tr>
<td>7:30 PM</td>
<td>ID 18</td>
<td>3RS OPPORTUNITIES IN PRECLINICAL SAFETY TESTING: A CRO PERSPECTIVE</td>
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<td>7:45 PM</td>
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<td>IMPROVING THE 3RS IN DRUG DEVELOPMENT TAKES COLLABORATIVE EFFORT</td>
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<tr>
<td>8:00 PM</td>
<td>SESSION 127 &amp; A</td>
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Rigor, Relevance and Reproducibility in (animal) research: when "Science’s 3Rs" come into play

While one can think there is failure to improve experimental design and increase 3Rs principle uptake in the scientific community, this session aims at bridging science quality and the 3Rs - providing concrete scientific perspectives on how rigor, relevance and reproducibility foster the best use of research models and deliver scientific results that ultimately benefit the 3Rs; - illustrating the continuity and complementarity in the use of non-animal and animal research models as the best approach to shift from animal to non-animal methods over time through knowledge sharing; - ultimately aligning researchers and regulators to the same ultimate 3Rs goal.

Sponsored by Sanofi R&D

Session chair and co-chair
S. Rao, SANOFI R&D and A. L Andreu, EATRIS

Time Abstract Speakers
6.30 PM ID 890 RIGOR, RELEVANCE AND REPRODUCIBILITY IN THE USE OF IN VIVO MODELS IN THE PHARMACEUTICAL INDUSTRY S. Rao, Sanofi R&D
7.00 PM ID 761 INCREASING THE RELIABILITY OF PRECLINICAL DATA: ENABLING APPROACHES I. Lefere, Sanofi R&D
7.30 PM ID 112 REPRODUCIBILITY CRISIS IN PRECLINICAL RESEARCH A. Andreu, EATRIS
8.00 PM SESSION 219 Q&A

Personalized medicine through human organoid models

Adult- and induced pluripotent stem cells are unique sources of somatic human cells from patients and healthy individuals, challenging to obtain reproducibly in large numbers from primary tissue samples. Immune cells and inflammation are major disease triggers and identifying renewable sources of these cells would benefit attempts to model disease as in patients. These stem cell derivatives can be cultured in 2D or 3D and in simple or multiple cell type combinations and thus form Micro-physiological Systems that can ‘stand alone’ as research or drug screening models or may be incorporated into Organ-on-Chip models for inclusion of appropriate biophysical parameters.

Session chair
C. Mummery, LUMC C. Denning

Time Abstract Speakers
6.30 PM ID 945 HUMAN PLURIPOTENT STEM CELL MODELS FOR CARDIOTOXICITY Chris Denning, University of Nottingham, Biodiscovery Institute, Faculty of Medicine & Health Sciences
7.00 PM ID 944 GASTROLOIDS FROM STEM CELLS: MODELS OF EARLY DEVELOPMENT. Alfonso Martinez Arias, University of Cambridge, Department of Genetics
7.30 PM ID 908 BUILDING VESSELS ON A CHIP TO MODEL GENETIC VASCULAR DISEASES USING PATIENT-SPECIFIC INDUCED PLURIPOTENT STEM CELLS Valeria Orlova, Leiden University Medical Center
7.30 PM ID 948 A STANDARDIZED PLATFORM FOR MINIATURIZED CORTICAL ORGAN Steven Kushner, Department of Psychiatry, Erasmus Medical Center Rotterdam
8.00 PM SESSION 117 Q&A
Innovative Technologies
Disease
Ethics, Welfare
and Regulation
Safety

**PROGRAM**

**Thursday 26 August 2021 - Day 4**

**6.30 - 8.30 PM THU-2**

**S231 Building confidence in Next Generation Risk Assessment**

Next Generation Risk Assessment (NGRA) is an exposure-led, hypothesis-driven approach that uses new approach methodologies (NAMs) to ensure the chemical safety without the use of animal data. Whilst some NAMs have been validated and adopted by regulators (e.g., OECD test methods for skin sensitization) there is a need amongst both industry and regulatory risk assessors for more examples to demonstrate the utility of NAMs for decision-making on effects that are associated with systemic exposure to chemicals. This symposium will increase awareness and confidence in the use of NAMs for decision-making, by showcasing several of the components of an NGRA framework.

Session chair and co-chair
C. Westmoreland, Unilever and M. Varçin, Cosmetics Europe

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<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
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<tr>
<td>6.30 PM</td>
<td>ID 677</td>
<td>Perspectives on the use of high throughput profiling assays in next generation risk assessment</td>
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<tr>
<td>7.00 PM</td>
<td>ID 628</td>
<td>Predictive value of PBx-model predictions based on in vitro and in silico input data as essential tool in next generation (animal-free) risk evaluations</td>
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<tr>
<td>7.15 PM</td>
<td>ID 851</td>
<td>In silico approaches to link adverse outcomes to molecular initiating events through AOPs</td>
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<td>7.30 PM</td>
<td>ID 262</td>
<td>An industry perspective on strategies for integrating new approach methodologies for nexgen risk assessment: Coumarin as a case study</td>
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<td>7.45 PM</td>
<td>ID 337</td>
<td>Integrating toxicokinetics and toxicodynamics for decision-making in an NGRA context: 2 cosmetics-europe case studies</td>
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**PROGRAM**

**Thursday 26 August 2021 - Day 4**

**6.30 - 8.30 PM THU-2**

**S230 The in3 project: An integrated interdisciplinary approach to animal-free nanomaterial and chemical safety assessment**

In3 is a EU’s Marie Skłodowska-Curie Action - Innovative Training Network project funded by the EU Horizon 2020 under grant no. 721975. In3 focuses on research and training of 15 PhD students in utilising integrated in silico and in vitro tools for animal-free toxicity assessment. There is a particular interest in the project on utilizing human induced Pluripotent Stem Cells (hiPSC) differentiated to toxicologically relevant target tissues such as brain, lung, liver, vasculature and kidney, but also anchoring this information to mechanistic toxicology and utilizing read across and adverse outcome pathways.

Session chair
M. Culot, Université d’Artois

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<tr>
<td>6.30 PM</td>
<td>ID 938</td>
<td>The in3 project - an integrated interdisciplinary approach to animal-free nanomaterial and chemical safety assessment</td>
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<tr>
<td>6.45 PM</td>
<td>ID 837</td>
<td>Study the effect of cycloporin A on functionality of endothelial cells differentiated from induced pluripotent stem cells as in vitro toxicity model</td>
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<td>7.00 PM</td>
<td>ID 809</td>
<td>Exploiting the use of ipsc derived renal proximal tubular like cells to investigate megalin mediated aminoglycosides toxicity</td>
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<td>7.15 PM</td>
<td>ID 654</td>
<td>IPSC-derived human brainpheres: a multifaceted and powerful 3D model for neurotoxicity testing</td>
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<td>7.30 PM</td>
<td>ID 768</td>
<td>Probabilistic modeling of an adverse outcome pathway network for developmental neurotoxicity</td>
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<tr>
<td>7.45 PM</td>
<td>ID 608</td>
<td>New read across modules for safer chemicals</td>
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A walk through 10 years of CAAT-Europe's highlights

The Center for Alternative to Animal Testing in Europe (CAAT-Europe), housed at the University of Konstanz, coordinates transatlantic activities to promote the development of new and improved methods in toxicology, to provide a platform for different stakeholders for exchanging ideas, and to support the 3Rs principle of human science. CAAT-Europe is going to celebrate the 10th anniversary of its foundation, with a session focused on the most relevant CAAT articles that have been published in the last years. The presentations will cover several topics, as in vitro regulatory, systemic and investigative toxicology, including the application of omics, microphysiological systems and good practice guidance for supporting a human-centered toxicity testing paradigm change. Each speaker will introduce a single publication to tell the story behind its compilation and to discuss its implication and impact on the actual and future discussion in the 3Rs field.

Speakers:
(2010) CAAT-EUROPE’S BIRTH
Thomas Hartung, CAAT/ Johns Hopkins University

(2011) ‘How are reproductive toxicity and developmental toxicity addressed in REACH dossiers?’
Costanza Rovida, CAAT-Europe

(2013) ‘Metabolomics in toxicology and preclinical research’
Bennard Van Ravenzwaay, BASF SE

(2014) ‘Consensus report on the future of animal-free systemic toxicity testing’
Michael Schwarz, Johns Hopkins Bloomberg School of Public Health

Francois Busquet, Altentox

(2016) ‘Biology-inspired microphysiological system approaches to solve the prediction dilemma of substance testing’
Thomas Steger Hartmann, Bater

(2017) ‘Good Cell Culture Practice for stem cells and stem-cell-derived models’
Sandra Coecke, JRC EURL-ECVAM

Mano Beilmann, Boehringer Ingelheim

The impact of the CAAT publication series on ALTEX
Sonja von Aulock, ALTEX

Session chair
M. Leist, CAAT-Europe/ University of Konstanz and G. Paliocca, CAAT-Europe/ University of Konstanz
Wildlife research and the 3Rs principles

Wildlife research is considered crucial for successful species conservation in the midst of current biodiversity loss, but often includes invasive research practices. Wildlife research can thus result in a fundamental conflict between individual animal welfare and the welfare of the population or ecosystem, which could be significantly minimized if the 3Rs principles were more broadly implemented. The purpose of this session is to invite the audience of the World Congress to share their experiences in integrating the 3Rs principles in wildlife research, present solutions that can promote broader implementation of these principles, and define priorities for the near future.

Session chair
M. Zemanova, Centre for Compassionate Conservation, University of Technology Sydney & Animalfree Research, Switzerland

Time Abstract Speakers
3.00 PM ID 153 APPLYING THE 3RS PRINCIPLES IN WILDLIFE RESEARCH THROUGH NON-INVASIVE METHODS Miriam Zemanova, Centre for Compassionate Conservation, University of Technology Sydney

3.30 PM ID 25 IS WILDLIFE RESEARCH “SECOND-RATE SCIENCE”? WHAT CAN LAB ANIMAL AND FIELD SCIENTISTS LEARN FROM ONE ANOTHER? Adrian Smith, Norecopa

3.45 PM ID 1180 FIELD VS LABORATORY 3R. IT’S NOT ABOUT WHAT WE DO WITH THE ANIMALS. IT’S ABOUT THE RESEARCH AND ITS SETTING! Adriaan de Jong

4.00 PM ID 1181 EVALUATING THE WELFARE OF WILDLIFE: IDENTIFYING PRIORITIES Cathy M. Dwyer

4.30 PM SESSION 113 Q&A
**Program**

Friday 27 August 2021 - Day 5

### 3.00 - 5.00 PM FRI-1

**S65**

Diving into the scientific knowledge big data looking for alternatives

The implementation of a new method or model by life science researchers is based on six phases: 1) access to scientific knowledge; 2) theoretical familiarization; 3) experimental reproduction; 4) adaptation to their own specific research paradigm; 5) internal validation and 6) deployment. In this view, easy access to scientific knowledge is the gatekeeping phase towards final deployment (and enhanced uptake) of non-animal models and methods, because it empowers not only researchers, but also regulators, ethical approval boards and those responsible for project/animal licence approvals to discover already available alternatives, importantly reducing duplication of efforts, and boosting the horizontal use and cross-validation in different fields of application. Improving, or facilitating, informed access to scientific knowledge means that all these stakeholders know how to search for publications of interest and, on the other side, implies that key publications are easy findable. Our experience tells us that literature search skills in these communities often need improvement and additionally, increasing visibility of non-animal methods could improve familiarity with, and uptake of such methods and could therefore reduce animal use. It is also true that, for identifying key publications, the precise nature of the models and/or methods must be better highlighted in titles/abstracts when drafting scientific documents. The overall aim of this workshop is to improve literature search skills for the disparate groups of stakeholders who are required to maintain currency with developments in non-animal methodologies. We will provide tips for highlighting non-animal alternatives when drafting a document, consider how and where to search for reliable sources of information and also describe how automated, deep learning methods could be employed to create and update libraries.

**Session chair**
Laura Grimaldi, European Commission JRC and Adelaide Dura, European Commission JRC

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<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>3.00 PM</td>
<td>ID 20</td>
<td>HOW TO BETTER HIGHLIGHT YOUR RESEARCH BY USING THE RIGHT KEYWORDS IN TITLES AND ABSTRACTS</td>
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<tr>
<td>3.15 PM</td>
<td>ID 673</td>
<td>GOOD PRACTICE: KEY EXPERIMENTAL DETAILS TO HIGHLIGHT WHEN DRAFTING YOUR RESEARCH ARTICLE</td>
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<td>3.30 PM</td>
<td>ID 93</td>
<td>MIND THE GAP: IMPROVING LITERATURE SEARCH SKILLS TO ACCESS THE MOST RELEVANT SCIENTIFIC AND TECH KNOWLEDGE</td>
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<td>3.45 PM</td>
<td>ID 258</td>
<td>DATA ACCESS AND EU INSTITUTIONS</td>
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<td>4.00 PM</td>
<td>ID 637</td>
<td>ADVANCING MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE TECHNIQUES FOR USE IN (SEMI-)AUTOMATIC LITERATURE REVIEWS</td>
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<td>4.15 PM</td>
<td>ID 1117</td>
<td>NAMMED: DEVELOPMENT OF AN ARTIFICIAL INTELLIGENCE DATABASE TO COLLECT AND STRUCTURE NON-ANIMAL METHODS IN USE FOR BIOMEDICAL RESEARCH</td>
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<td>4.30 PM</td>
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<td>SESSION 65 Q&amp;A</td>
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Innovative Technologies Disease Ethics, Welfare and Regulation Safety

**PROGRAM**
Friday 27 August 2021 - Day 5

### 3.00 - 5.00 PM S213 Documentary Film and Alternatives Room
The Documentary Film and Alternatives Room showcases a number of new and recent documentary films that address animal experimentation and the innovative, humane methods being implemented in education and training, research and testing. Each film’s producers will be available for questions and answers after the showings. The room will also feature demonstrations and footage of a range of education and training tools, from virtual reality models for comparative anatomy practical classes to advanced synthetic cadavers for medical and veterinary surgery training.

**Session chair**
Nick Jukes, InterNICHE

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<tr>
<td>ID 827</td>
<td>DVM: TRAINING THE ANIMAL DOCTOR</td>
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<td>ID 820</td>
<td>GOLD DOESN’T RUST: THE FAILING STANDARD OF THE ANIMAL MODEL</td>
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<td>ID 826</td>
<td>TEST SUBJECTS</td>
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### 3.00 - 5.00 PM S315 Enabling Animal-Free Safety Assessment of Cosmetics Globally
Sponsored by Humane Society International

**Session chair**
Nick Jukes, InterNICHE

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<tr>
<td>3.00 PM</td>
<td>WELCOME BY CHAIR Mustafa Varçin, Cosmetics Europe, Arianna Giusti</td>
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<tr>
<td>3.05 PM</td>
<td>KEYNOTE INTRODUCTION - BASICS OF READ-ACROSS AND LEAD-IN TO CASE STUDIES Mark Cronin, Liverpool John Moores University</td>
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<td>3.25 PM</td>
<td>CASE STUDY I - PREDICTION OF MICROVESICULAR LIVER STEATOSIS – A READ-ACROSS CASE STUDY WITH SHORT BRANCHED CARBOXYLIC ACIDS Sylvie Escher</td>
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<td>CASE STUDY II - PREDICTION OF DEVELOPMENTAL AND REPRODUCTIVE TOXICITY (DART): A READ-ACROSS CASE STUDY WITH SHORT BRANCHED CARBOXYLIC ACIDS (2-METHYLHEXANOIC ACID) Dinant Kroese, TNO</td>
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<td>4.15 PM</td>
<td>CASE STUDY III - CASE STUDY ON THE USE OF INTEGRATED APPROACHES FOR TESTING AND ASSESSMENT FOR SYSTEMIC TOXICITY ARISING FROM COSMETIC EXPOSURE TO CAFFEINE Jane Rose, Procter &amp; Gamble, USA</td>
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<tr>
<td>4.40 PM</td>
<td>LIVE Q&amp;A AND CONCLUSION</td>
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### 3.00 - 5.00 PM S316 EPAA training session on Skin sensitisation
Sponsored by EPAA

**Session chair**
Francois Busquet, Altertox

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<tr>
<td>3.00 PM</td>
<td>WELCOME &amp; INTRODUCTION/HOUSE-KEEPING RULES BY THE MODERATOR Francois Busquet, Altertox</td>
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<tr>
<td>3.10 PM</td>
<td>INTRODUCTION ON SKIN SENSITISATION NAMS AND DEFINED APPROACHES Nicole Kleinstreuer, US NICETAM</td>
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<tr>
<td>3.35 PM</td>
<td>PREDICTING GHS CLASSES FOR SKIN SENSITIZATION USING VALIDATED NON-ANIMAL TESTS: THE KINETIC DIRECT PEPTIDE REACTIVITY ASSAY COMBINED WITH THE 2 OUT OF 3 DEFINED APPROACH Susanne Kole, Andreas Natsch</td>
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<td>3.50 PM</td>
<td>COSMETICS EUROPE NGRA IATA CASE STUDY Nathalie Altée, L’Oreal</td>
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<tr>
<td>4.05 PM</td>
<td>LIVE Q&amp;A (MIX OF QS BASED ON THE CASE STUDIES PRESENTED AND BROADER QS - ALL PARTICIPANTS CAN SUBMIT QS VIA THE CHAT) Nicole Kleinstreuer, US NICETAM</td>
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### 3.00 - 5.00 PM S317 CONTINUED EDUCATION - READ-ACROSS SUPPORTED BY NEW APPROACH METHODOLOGIES (NAM)
Delivered by Cosmetics Europe and EU-ToxRisk

**Session chair**
Mustafa Varçin, Cosmetics Europe, Arianna Giusti

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<tr>
<td>3.00 PM</td>
<td>ENABLING ANIMAL-FREE SAFETY ASSESSMENT OF COSMETICS GLOBALLY: INTRODUCTION Catherine Willett, Human Society International</td>
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<tr>
<td>3.10 PM</td>
<td>GLOBAL COSMETICS REGULATORY LANDSCAPE Jay Ingram, Delphic HSE</td>
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<td>3.35 PM</td>
<td>AFSA COSMETICS MODULE ON CONSUMER EXPOSURE Christina Hickey, Fimenich</td>
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<td>3.50 PM</td>
<td>AFSA MODULE ON INTERNAL EXPOSURE Rebecca Clewell</td>
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<td>4.05 PM</td>
<td>AFSA MODULE ON INTEGRATION OF IN VITRO DATA TO ESTABLISH MARGIN OF SAFETY Paul Russell</td>
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<td>4.25 PM</td>
<td>ROUND TABLE</td>
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**PROGRAM**
Friday 27 August 2021 - Day 5

### 3.00 - 5.00 PM S317 CONTINUED EDUCATION - READ-ACROSS SUPPORTED BY NEW APPROACH METHODOLOGIES (NAM)
Delivered by Cosmetics Europe and EU-ToxRisk

**Session chair**
Mustafa Varçin, Cosmetics Europe, Arianna Giusti

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<td>LIVE Q&amp;A AND CONCLUSION</td>
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### YOU-WC11 - WORKSHOP 2
**“CAREER DEVELOPMENT – CREATING A CONVINCING PERSONAL PROFILE FOR DIFFERENT FIELDS OF ACTIVITY”**

One major challenge throughout the scientific career is publishing. Therefore, this workshop will focus on the questions – **How does publishing work? Why do we need peer reviewing and how do I review appropriately? What do I need for a high-quality publication?** Three experts will present their perspectives, insights, and experiences which will be followed by an interactive discussion round in three separate virtual rooms each guided by one of the experts.

**Session chair**
Annemarie Lang, Charité-Universitätsmedizin Berlin

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<tr>
<td>3.00 PM</td>
<td>INTRODUCTION</td>
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<tr>
<td>3.05 PM</td>
<td>FROM PH.D. TO POSTDOC: JOURNEY TOWARDS SCIENTIFIC SELF-REALIZATION</td>
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<tr>
<td>3.15 PM</td>
<td>HOW TO FIND THE BALANCE BETWEEN SCIENTIFIC MOTIVATION AND BEING FOCUSED? Vijay Pal Singh, CSIR-Institute of Genomics &amp; Integrative Biology (India)</td>
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<td>3.25 PM</td>
<td>FINALLY PROFESSOR - WHAT COMES NEXT? Thomas Hartung, CAAT / Johns Hopkins University</td>
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<td>3.35 PM</td>
<td>INTRODUCTION 2</td>
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<tr>
<td>3.40 PM</td>
<td>INDUSTRY: AS ALTERNATIVE PATH OR FIRST CHOICE?</td>
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<tr>
<td>3.50 PM</td>
<td>BRIDGING RESEARCH AND SCIENTIFIC EDITING: BEHIND THE SCENES OF A SCIENTIFIC JOURNAL Sonja von Aulock</td>
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<td>4.00 PM</td>
<td>Q&amp;A AND BREAK OUT ROOMS (VIA ZOOM)</td>
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### PARALLEL SESSION FRI-2
**APPLICATIONS OF NEW APPROACH METHODS IN GENOTOXICITY AND DEVELOPMENTAL TOXICITY TESTING**

Every year, large numbers of new compounds are being developed for a wide range of purposes. Due to the large numbers of compounds that require safety assessment, there is an increasing demand for rapid and reliable in vitro assays that assess their toxicity in an early phase of drug or product development. At the same time, there is a strong demand to reduce animal testing. We have therefore developed various in vitro cell-based assays for chemical safety assessment with the focus on understanding the mode-of-action (MoA) of toxic compounds. ToxTracker is a unique stem cell-based reporter assay for reliable genotoxicity and carcinogenicity hazard identification. The ToxTracker assay reliably identifies genotoxic compounds and provides insight into their mode-of-action. The assay is able to discriminate between direct DNA reactivity and indirect genotoxicity related to oxidative stress or protein damage and can differentiate between genotoxic compounds with a clastogenic or aneugenic MoA. Various extensions of ToxTracker to further investigate the MoA of genotoxic compounds are combined in the ToxTracker suite. ReproTracker is a human induced pluripotent stem cell (hiPSC)-based biomarker assay that follows the differentiation during early embryonic development. The hiPSCs are differentiated into the primordial endoderm, ectoderm, and mesoderm germ layers and further matured into hepatocytes, cardiomyocytes, and neural rosettes. The differentiation process is followed by morphological profiling and expression pattern analysis of cell-specific biomarkers. In this session, we will address the latest developments and applications of these novel tools for the fields of genotoxicity and developmental toxicity. We will discuss how results from the in vitro assays can be extrapolated to in vivo exposures and how these assays help in replacing or reducing animal testing by providing reliable in vitro data.

**Sponsored by Toxys**

**Session chair**
Giel Hendriks

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<tr>
<td>5.00 PM</td>
<td>INTRODUCTION Giel Hendriks</td>
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<td>5.10 PM</td>
<td>HUMAN STEM-CELL BASED ASSAY FOR IN VITRO ASSESSMENT OF DEVELOPMENTAL TOXICITY Amer Jamalpoor, Toxys</td>
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<td>5.35 PM</td>
<td>INTEGRATION OF REPROTRACKER INTO A NEXT GENERATION RISK ASSESSMENT (NGRA) APPROACH Iris Muller, Unilever</td>
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<td>6.00 PM</td>
<td>TOXTRACKER, A HIGHLY QUANTITATIVE NEW APPROACH METHOD FOR MECHANISTIC GENOTOXICITY ASSESSMENT Inger Brandstorn, Toxys</td>
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<td>6.25 PM</td>
<td>APPLICATION OF IN VITRO TO IN VIVO EXTRAPOLATION TO TOXTRACKER DATA FOR POINT OF DEPARTURE DERIVATION Marc Beal, Health Canada</td>
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<tr>
<td>6.50 PM</td>
<td>GENERAL DISCUSSION AND CONCLUSIONS</td>
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From the very beginning, P&G knew that committing to animal-free testing would be a significant and challenging undertaking that would take years. Undeterred, we have used our passion to achieve the right thing: an ethical safety approach, combining better safety science that is more accurate than ever before. Several decades of effort and innovation have led us to establish the safety of cosmetic products without the use of animals.

WE ARE PASSIONATE ABOUT ANIMAL WELFARE AND RESPONSIBLE SAFETY ASSESSMENT

PROGRAM
Friday 27 August 2021 - Day 5

5.00 - 7:30 PM
INDUSTRY SESSION 1

5.00 - 6.00 PM
Pre-poster warm up sessions live from the studio

6.00 - 7.30 PM
Poster session and possibility to ask questions to poster presenters

7:30 - 8:30 PM
WC11 TV - Talk show
Talkshow 2 will discuss Human Diseases and Drug Development and will focus on neurodegenerative diseases. The context is that investigations into the understanding of complex neurodegenerative diseases (such as Alzheimer and Parkinson) still strongly rely on animal use. The same applies to the testing of candidate drugs to treat these diseases. Whole-animal studies are suggested to be needed to understand the complex biological processes, but do we really need animal testing?
Biomed 2.0 - Non-animal Models for Biomedical Research

Animal models have been traditionally used in biomedical research to recapitulate human disease features and develop new drugs, as they are generally supposed to resemble some of the major hallmarks of human diseases. However, these animals do not develop the disease as it occurs in humans, and their use has not paved the way to the development of drugs effective in human patients for many highly prevalent non-communicable diseases, such as Alzheimer disease. Indeed, despite conspicuous research and economical endeavours, the clinical failures rate in drug development remains very high, with an overall likelihood of approval from Phase I of about 9.6%. On the other hand, enhanced human clinical trials utilizing micro-dosing, and more representative study populations and durations, as well as surrogate human tissues, advanced imaging modalities and human epidemiological, sociological and psycho-social studies, may increase our understanding of illness aetiology and pathogenesis, and facilitate the development of safe and effective pharmacological interventions. Particularly when human tissues are used, non-animal models may generate faster, cheaper results, more reliably predictive for humans, whilst yielding greater insights into human biochemical processes. A first effort to gather existing knowledge about non-animal models of highly prevalent human diseases has been made by the Joint Research Centre of the European Commission. The final goal is to disseminate and improve knowledge sharing on potentials and limitations of human based models at different levels: scientific communities, universities and secondary schools, national committees for animal welfare and the public at large. Additionally, project proposals in translational research based on the use of both animal and/ or non-animal approaches have been extensively funded at European level. Notwithstanding, defining indicators to measure return on investment of research funding strategies is necessary to retrospectively assess public benefits from a fair, open-minded debate. There are many uncertainties, and arguments from other stakeholders. This leads to a destructive, increasingly polarizing discussion potentially paralyzing the transformation process. In this session we explore how to learn from previous experiences with complex transformation processes, and some successful drivers of transformation will speak.

Session chair and co-chair
L. Gribaldo, EURL-ECVAM, F3 Unit, JRC, EC and M. Straccia, FRESCI

Time Abstract Speakers
3.00 PM AN INVENTORY OF NON-ANIMAL METHODS TO STUDY ALZHEIMER’S AND PARKINSON’S DISEASE Liesbeth Aerts; VIB Center for Brain & Disease Research, VIB, Belgium; IU Leuven - University of Leuven, Leuven, Belgium.
3.15 PM AVAILABLE AND EMERGING NON-ANIMAL MODELS FOR HUMAN RESPIRATORY TRACT DISEASES Lindsay Marshall, Humane Society International
3.30 PM WHAT IS THE ANALYSIS OF BIOMEDICAL RESEARCH LITERATURE TELLING US ABOUT THE USE OF NON-ANIMAL MODELS? Marco Straccia, FRESCI by SCIENcejEstrATEGY Srl
3.45 PM THE NEED TO ADDRESS HUMAN RELEVANCE AND MEASURE IMPACT AND INNOVATION OF BIOMEDICAL RESEARCH Francesca Pistolfato, European Commission, Joint Research Centre, Ispra, Italy
4.00 PM INNOVATIVE STRATEGIES IN BIOMEDICAL RESEARCH: WHICH MODELS? Laura Gribaldo, JRC-EC
4.30 PM SESSION 122 Q&A
**PROGRAM**

Monday 30 August 2021 - Day 6

### 3.00 - 5.00 PM MO-1 S162

**Novel cell-based technologies for predicting drug-induced liver injury**

Drug-induced liver injury remains the most common cause of the safety-related withdrawal of drugs from the market, and despite extensive animal testing and in vitro testing. Therefore, there is a great need for better in vitro predictive models. During this session, the speakers will address progress made in different aspects of in vitro liver models that should enhance drug toxicity prediction. This includes different cells of origin (primary and pluripotent stem cell-derived liver cells), as well as advanced technologies to create tissue mimetics (laser-guided printing, fully defined hydrogel-icollidal-based spheroids, organoid or spheroid formation) as well as multi-organ-on-a-chip systems.

**Session chair**

C. Vertessy, Katholieke Universiteit Leuven

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<tr>
<td>3.00 PM</td>
<td><strong>BIOLOGY-INSPIRED MICROPHTHYSIOLOGICAL SYSTEMS:</strong> THE ASSET OF MULTI-ORGAN CO-CULTURES</td>
<td>E. Dehe, TissUse GmbH</td>
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<td>3.15 PM</td>
<td><strong>A NEW IN VITRO MODEL FOR INTERROGATING DILI SUSCEPTIBILITY FOR PATIENTS WITH BENIGN FATTY LIVER DISEASE</strong></td>
<td>Katarzyna Sanchez, InSphero AG</td>
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<td>3.30 PM</td>
<td><strong>LIVER ORGANOIDS TO TOXICITY STUDIES</strong></td>
<td>H. Clevers, Hubrecht Institute</td>
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<td>3.45 PM</td>
<td><strong>COMPLEX IN-VITRO MODELS: SYNTHETIC MATRICES FOR PLURIPOTENT STEM CELLS (PSC) DERIVED MULTI-CELLULAR 3D LIVER ORGANOIDS</strong></td>
<td>Manoj Kumar, Stem Cell Institute, KU Leuven</td>
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<td>4.00 PM</td>
<td><strong>DEVELOPMENT OF A BIOPRINTED LIVER TISSUE MODEL AND ITS EVALUATION FOR DRUG TOXICITY TESTING</strong></td>
<td>F. Guillermot, Poetis</td>
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<td><strong>SESSION 162 Q&amp;A</strong></td>
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### 3.00 - 5.00 PM MO-1 S104

**AOPs, MOAs, and KCs - Mutually Informative, Not Mutually Exclusive**

Adverse Outcome Pathways (AOPs) are frameworks for organizing and integrating diverse, and sometimes abundant, toxicological data. AOPs include identification of the initial chemical-biological interaction (the molecular initiating event), a complete sequence of biological events (key events), and relationships between events that lead to an adverse outcome of actionable concern. AOPs evolved from mode-of-action (MOA) and other encoding concepts and have expanded on this groundwork by more precisely defining the level of knowledge required to link a molecular interaction to an adverse effect. MOA lists part of the lexicon of modern toxonomy and are well beyond the proof of concept phase, yet to date, application of AOPs to chemical safety decision making has been limited. This may be due in part to the substantial research investment required to research, author, and review a ‘complete’ AOP. In the cases where all key events are known and there are non-animal methods to test these events, testing strategies may be sufficiently predictive of the actual response to replace the need for in vivo data (e.g., skin sensitization). However, for circumstances that do not achieve this high standard, a variety of other strategies that do not require an complete understanding of the biological events between molecular interactions and adverse effects have been successfully deployed for chemical safety decision making. For example, evaluating the hazard of chemicals that may interact with variable endocrine systems requires data on the chemical’s MOA and an adverse effect in an animal but to date, complete AOPs (from KE to special adverse outcome) are not available for most types of endocrine toxicity. This has not prevented regulatory agencies from using pathway-based models in chemical prioritization and hazard screening, and to replace the need for some in vivo testing. Another recent approach has been to interrogate, assemble, and evaluate the relevant evidence on various cancer mechanisms according to defined key characteristics (KCs), chemical and biological properties of established cancer agents identified by the WHO’s International Agency for Research on Cancer (IARC). An approach based on the ICS does not require an a priori hypothesis concerning the biological mechanisms or signaling that initiates the toxic effect or all events leading to carcinogenesis, but nonetheless can contribute to protecting human health, in some cases, in the absence of animal experiments. In other scenarios, AOP frameworks can be used to identify candidate assays to fill regulatory data gaps, even for circumstances where the intermediate events linking the molecular initiating event and adverse effect may not be well understood. For example, chemicals that interfere with retinoid pathway signaling are associated with some of the most common human birth defects. Rather than designing a new in vivo test to investigate retinoid signaling in vitro and in vivo mechanistic tests can help identify environmental chemicals that may act through this pathway. This session will focus on the key challenges from these different approaches, highlighting examples for integrating evidence that are used in regulatory decision making and involving varying degrees of understanding of the biological mechanisms linking mechanistic effects to adverse outcomes. The presentations will address the strengths and limitations of each of these approaches, and where the different approaches may be mutually informative. Improve chemical safety hazard identification and reduce the need for animal testing.

**Session chair**

Patience Browne, OECD

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<td><strong>BUILDING AN AOP-DRIVEN DEFINED APPROACH GUIDELINE</strong></td>
<td>Nicole Kleinsteufer, NIEHS/NICETAT</td>
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**PROGRAM**

**Monday 30 August 2021 - Day 6**

### 3.00 - 5.00 PM MO-1 S124

**Connecting experts with TPI.tv**

To connect professionals working in the chain of animal-free innovations - from scientific discovery to market access - we have developed TPI.tv. This is a cloud-network of professionals with supply or demand of information, knowledge and data. It connects professionals who want to enter into a dialogue on the transition to animal-free innovation. Because dialogue is key to the development and application of innovations that will increase efficacy and safety of medicines, food, cosmetics and chemicals, whilst making the use of animal tests redundant. In this session we will: 1. Present: a. an animation on the why, how and what of TPI.tv (10 min) b. an Instructive video how to make an effective and mobilizing video-abstract (10 min) c. the channel TPI.tv with individual browsing time (10 min) 2. Have an interactive part with and a real-time poll (30 min) 3. Have an online panel discussion on sharing content on TPI.tv (30 min)

**Session chair**

H. Heusinkveld, RIVM

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**STOPTOX: AN IN-SILICO ALTERNATIVE TO ANIMAL TESTING FOR ACUTE SYSTEMIC AND TOPICAL TOXICITY**

Innovative Technologies integrating standardised regulatory test methods: challenges and perspectives

Modern technologies supported by good science are progressively bringing innovative solutions to the need to move away from systematic animal testing. Innovation has a cost for companies who invest in research and development, and the resulting intellectual property need to be protected. At the same time, the regulatory community requires reliable and transparent methodologies that they can rely upon for the safety assessment of chemicals. In the OECD context of Mutual Acceptance of data, another layer of complexity is added by the need for the methods to be broadly available and transferable. The presentations in this session will illustrate some of the challenges faced and solutions implemented to allow protected elements in test methods to integrate Test Guidelines used in regulatory contexts.

**Session chair**

Anne Gourmelon, OECD and João Barroso, EURL ECVAM Joint Research Center

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**TRANSFERABILITY CHALLENGES WITH MODERN TECHNOLOGY AND HOW TO OVERCOME THEM - A CASE STUDY OF THE CARD ASSAYS FROM A TEST METHOD DEVELOPER’S PERSPECTIVE**

Axel Sjöblad, SenzaGen AB

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**AUDITING FOR GLP COMPLIANCE, A REGULATORY STUDY THAT RELIES HEAVILY ON COMPUTERISED PREDICTION MODELS AND COMPLEX IN VITRO TECHNIQUES, WHERE ARE THE PITFALLS AND ISSUES TO CARE ABOUT**

Monique Perron, U.S. EPA

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**ESTABLISHING SCIENTIFIC CREDIBILITY OF NAMS. TO WHAT EXTENT IS TESTING RELIANCE ON COMPUTER SIMULATION AND COMPLEX IN VITRO TECHNIQUES? WHERE ARE THE PITFALLS AND ISSUES TO CARE ABOUT?**

Martijn Baeten, Sciensano GLP Monitoring Authority Belgium

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**STOPTOX: AN IN-SILICO ALTERNATIVE TO ANIMAL TESTING FOR ACUTE SYSTEMIC AND TOPICAL TOXICITY**

Anne Kienhuis, RIVM

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**SHARING CONTENT ON TPI.tv**

Sharing content on TPI.tv (30 min) 1. Present: a. an animation on the why, how and what of TPI.tv (10 min) b. an Instructive video how to make an effective and mobilizing video-abstract (10 min) c. the channel TPI.tv with individual browsing time (10 min) 2. Have an interactive part with and a real-time poll (30 min) 3. Have an online panel discussion on sharing content on TPI.tv (30 min)
Beyond the 3Rs: Expanding the Use of Human-Relevant Replacement Methods in Biomedical Research

The current landscape of alternative methods calls for a strategic focus on (1) biomedical research (where many human disease processes remain unclear), (2) replacement methods (given the myriad types of models now available (e.g., organs-on-a-chip), and (3) human relevance (given problems with the current translatability of models). This roundtable will reflect this strategic focus by addressing the use of human-relevant models in several areas of biomedical research, including cardiovascular disease, Alzheimer disease, autism, and cancer.

Session chair and co-chair
Martin Stephens, Johns Hopkins Bloomberg School of Public Health and Kathrin Herrmann, Johns Hopkins Bloomberg School of Public Health

Time  | Abstract  | Speakers
--- | --- | ---
6.30 PM | ID 21 | OVERVIEW OF NEW APPROACHES IN BIOMEDICAL RESEARCH - THE BIOMED21 COLLABORATION
Lindsay Marshall, The Humane Society of the United States/Humane Society International

6.45 PM | ID 696 | IN-SILICO TRIALS FOR DRUG SAFETY AND EFFICACY ASSESSMENT
Cristian Trovato, University of Oxford

7.00 PM | ID 3 | THE NEED TO PRIORITIZE “REPLACEMENT” IN ALZHEIMER’S DISEASE RESEARCH
Francesca Pistoliato, European Commission, Joint Research Centre, Ispra, Italy

7.15 PM | ID 689 | APPLICATIONS OF BRAIN-MODEL TECHNOLOGY TO STUDY CHEMICAL INDUCED NEURODEVELOPMENTAL DISORDERS
Helena Hogberg, Center for Alternatives to Animal Testing (CAAT), Johns Hopkins Bloomberg School of Public Health

7.30 PM | ID 513 | MINI ME - TISSUE-ON-A-CHIP AS A MIMIC FOR PATIENT RESPONSE
John Greeman, University of Hull

7.45 PM | ID 1116 | APPLICATIONS OF BRAIN-MODEL TECHNOLOGY TO STUDY NEURODEVELOPMENTAL DISORDERS
Cleber Trujillo, Stemsonix, a Vyant Bio Company

8:00 PM | | SESSION 84 Q&A

PROGRAM
Monday 30 August 2021 - Day 6

PARALLEL SESSION MO-2

6.30 - 8.30 PM MO-2 S84 5
Beyond the 3Rs: Expanding the Use of Human-Relevant Replacement Methods in Biomedical Research

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8:00 PM | | SESSION 84 Q&A

PROGRAM
Monday 30 August 2021 - Day 6

3Rs in vaccines Development

This session will review how 3R can be used in Vaccines development, from early development strategy to launch. The presentation will focus on success stories of recent developed vaccines and future trends.

Session chair and co-chair
S. Shaid, GSK and C. Stirling, Zoetis

Time  | Abstract  | Speakers
--- | --- | ---
6.30 PM | ID 523 | MENINGOCOCCAL GROUP B VACCINE: A JOURNEY TOWARDS A COMPLETE ANIMAL TEST FREE RELEASE PROCESS
Orazio Oliverio, GSK

6.45 PM | ID 695 | REGULATORY CONSEQUENCES OF THE VALIDATION OF REPLACEMENT IN VITRO TOXICITY AND ANTIGENICITY ASSAYS FOR CLOSTRIDIUM SEPTICUM VACCINE ANTIGENS
Marie-Emmanuelle Behr-Gross, EDQM Council of Europe

7.00 PM | ID 860 | NIH REPLACEMENT FOR HUMAN RABIES VACCINE: METHOD DEVELOPMENT AND STRATEGY FOR IMPLEMENTATION OF NEW ELISA FOR COMMERCIAL PRODUCT
Audrey Toinon, Sanofi Pasteur

7.15 PM | ID 373 | ALTERNATIVES TO ANIMAL TESTING IN VACCINE MANUFACTURING AND RELEASE
Denison Chang, Virbac

9.30 PM | | SESSION 120 Q&A
**PROGRAM**  
Monday 30 August 2021 - Day 6

6.30 - 8.30 PM MO-2  
S221 ▶ Implementing the Three Rs in the creation and breeding of Genetically Altered Animals (GAAs)

The use of Genetically Altered animals in scientific procedures in EU accounts for around one-third of all uses and continues to increase year on year. In some countries the use of GA mice and zebra fish exceed the use of conventional animals. The session will concentrate on current issues relating to different methods used in the creation and breeding of GA animals and consider, in particular, how animal numbers & degree of suffering can be minimised. Although GA mice are the most commonly used species, the session will also consider the impact of GA technologies on other commonly used species.

**Session chair**  
D. Anderson, Pentlands Management Systems

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<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>6.30 PM</td>
<td>GENETICALLY ALTERED ANIMALS (GAA) – WHY THE THREE RS ARE IMPORTANT</td>
<td>S. Louhimies, European Commission</td>
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<tr>
<td>7.00 PM</td>
<td>EU EXPERT WORKING GROUP PROPOSALS FOR COMMON GUIDANCE ON THE CREATION AND BREEDING OF GENETICALLY ALTERED ANIMALS (GAAS)</td>
<td>D. Anderson, PMS</td>
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<tr>
<td>7.15 PM</td>
<td>APPLICATION OF THE 3RS IN CREATION OF GAA MICE - THE CHALLENGES OF NEW TECHNOLOGIES</td>
<td>B. Jerchow, Novartis Institutes for BioMedical Research, Novartis Pharma AG, Basel, Switzerland</td>
</tr>
<tr>
<td>7.30 PM</td>
<td>THREE R CHALLENGES IN THE BREEDING OF GA RODENTS</td>
<td>A. Zintzsch, University of Basel</td>
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<tr>
<td>7.45 PM</td>
<td>ANIMAL WELFARE ASSESSMENT OF GENETICALLY ALTERED GÖTTINGEN MINIPIGS</td>
<td>L. Mikkelsen, Ellegrad</td>
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<td>8.00 PM</td>
<td>SESSION 221 GAA</td>
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**PROGRAM**  
Monday 30 August 2021 - Day 6

6.30 - 8.30 PM MO-2  
S135 ▶ Advancing Three Rs education and training under a European Parliament Pilot Project

European Parliament Pilot project promoting alternatives and the Three Rs in education and training facilitates the development of six interactive, open access e-learning modules on critical aspects of Directive 2010/63/EU and the development and uptake of non-animal alternatives to aid today’s users and method developers. Furthermore, the Education and Training Platform for Lab Animal Science (ETFLAS) is developing Learning Outcome assessment criteria and tools for competence assessment. Finally, targeting future generations, EURL ECVAM is preparing learning resources and guidance for educators on how to include the Three Rs in a curriculum for high schools, universities and for early career scientists.

**Session chair and co-chair**  
K. Schütte, European Commission

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<tr>
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<tbody>
<tr>
<td>6.30 PM</td>
<td>ADVANCING THREE RS UNDER A EUROPEAN PARLIAMENT PILOT PROJECT</td>
<td>Katrin Schütte, European Commission</td>
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<tr>
<td>6.45 PM</td>
<td>E-LEARNING RESOURCES TO SUPPORT TRAINING FOR PROJECT EVALUATION, PROJECT AND PROCEDURE DESIGN, AND SEVERITY ASSESSMENT FRAMEWORK</td>
<td>Paul Flecknell, Raife Consultants Ltd</td>
</tr>
<tr>
<td>7.15 PM</td>
<td>A EUROPEAN COMMISSION FUNDED PROJECT TO DEVELOP LEARNING OUTCOMES AND ASSESSMENT TOOLS TO FACILITATE HARMONISATION OF LAS EDUCATION AND TRAINING IN EUROPE</td>
<td>Jan-Bas Prins, Leiden University Medical Centre; The Francis Crick Institute</td>
</tr>
<tr>
<td>7.30 PM</td>
<td>ADVANCING THREE RS EDUCATION AND TRAINING UNDER A EUROPEAN PARLIAMENT PILOT PROJECT AT EURL ECVAM</td>
<td>Marcelle Holloway, European Commission, Joint Research Centre (JRC)</td>
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<tr>
<td>8.00 PM</td>
<td>SESSION 135 G6A</td>
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Sponsored by Concawe

Session chair and co-chair
H. Ketelslegers, European Petroleum Refiners Association (Concawe) and K Schutte, European Commission

Time Abstract Speakers

6.30 - 8.30 PM MO-2
5245 hands-on experience with the application of NAMs in intelligent testing strategies under regulatory programs

Chemical regulations, like REACH (European Regulation on Registration, Evaluation, Authorisation and restriction of Chemicals), are requiring extensive datasets and increased granularity in the data submitted to eventually help manage the potential risk related to exposure to chemicals. To progress towards a more sustainable approach to hazard and risk assessment, we should take the unique opportunity that REACH provides to promote alternative methodologies in order to reduce the reliance on testing in vertebrate animals on each of the three "Rs". In practice however, (regulatory) uptake of the application of these methodologies has been slow. Hands-on experience from different actors in the front line (regulators, academia, industry), will highlight both the challenges to overcome and opportunities we have going from development to increased practical application. Presentations will be short, to set the scene for an interactive panel debate with the aim to further contribute to the "3Rs in transition; from development to application”.

Sponsored by Concawe

Session chair and co-chair
H. Ketelslegers, European Petroleum Refiners Association (Concawe) and K Schutte, European Commission

Time Abstract Speakers

6.30 - 8.30 PM MO-2
5151 Transition management: tools & conditions

Animal-free innovation is not easy. It can accelerate in a certain climate. In this session we will have a conversation on how five pragmatic tools and conditions that are being created in the Netherlands all need and stimulate: trust & courage, a safe space, pre-conditions & support, transparency & openness and combining & sharing. The tools and conditions involved are: Helpathon, Beyond Animal testing Index (BATI), Vital Tissue, Pre-registration and systematic review, Target Images. The conversation will be illustrated with video fragments.

Session chair
Pia Dijkstra
Innovative Technologies Disease Ethics, Welfare and Regulation Safety

PROGRAM
Tuesday 31 August 2021 - Day 7

1.00 - 3.00 PM PLENARY SESSIONS

100 - 1.30 PM WC11 TV live from the studio

1.30 - 2.30 PM KEYNOTE:
THARANGA THORADENIYAP
UNIVERSITY OF COLOMBO

Tharanga Thoradeniya is a Senior Lecturer at the Department of Biochemistry and Molecular Biology, Faculty of Medicine, University of Colombo, Sri Lanka. Dr. Thoradeniya has a multidisciplinary background and has broad research interests and experience in metabolism and functionality of micronutrients, nutrition modulation of chronic disease risk, food systems, animal welfare and alternatives. Dr. Thoradeniya obtained her Bachelor of Veterinary Science (B.V.Sc) degree from the Faculty of Veterinary Medicine and Animal Science, University of Peradeniya, Sri Lanka an her Ph.D. in Nutritional Biochemistry from the University of Colombo, Sri Lanka.

She is a Commonwealth Fellow and has received many awards including the President’s Awards for scientific research. Dr. Thoradeniya is a past president of the Sri Lanka Association for Laboratory Animals Sciences and Sri Lankan Academy of Young Scientists, and currently the Vice-president of the Sri Lanka College of Biochemists.

She has extensive experience in animal welfare and ethics and is playing a leading role in conducting training on animal welfare and ethics locally and in the region. She was awarded the 2020 Global Animal Welfare Award by the World Veterinary Association (WVA) and Ceva Sante Animale (Ceva) for her outstanding service and dedication in promoting animal welfare.

2.30 - 3.00 PM WC11 TV live from the studio

3.00 - 5.00 PM TUE-1 S121 4
3R in vaccines batch release: Progress and future strategies

This session will review what is the situation on the use of animal in vaccine batch release and how 3R could be integrated in the acceleration and simplification of vaccines batch release process. It will also to present cross industry initiative and success stories leading to animal reduction in Batch release.

Session chair and co-chair
S. Shaid, GSK and S. Uhlrich, Sanofi Pasteur

Time Abstract Speakers
3.00 PM ID 937 VACCINE BATCH TO VACCINE BATCH COMPARISON BY CONSISTENCY TESTING (VAC2VAC) Hilde Depraetere, European Vaccine Initiative

3.15 PM ID 533 3RS APPROACH FOR POTENCY TESTING OF HUMAN COMBINED DTAP VACCINES: CURRENT STATUS AND NEXT STEPS Emmanuelle Coppens, Sanofi Pasteur

3.30 PM ID 441 TECHNOLOGY IS MOVING GSK TOWARDS THE SUBSTITUTION OF ANIMAL-TESTING Shahjahan Shaid, GSK Biologicals - Vaccines

3.45 PM ID 893 A VIEW FROM THE VETERINARY SECTOR ON 3R’S IN BATCH RELEASE Catrina Stirling, Zotesis Inc.

4.00 PM ID 912 REGULATORY ACCEPTANCE FOR THE SUBSTITUTION OF IN VITRO FOR IN VIVO VACCINE POTENCY AND SAFETY ASSAYS FOR BATCH RELEASE: SCIENCE VERSUS THE FEAR FACTOR Dean Smith, Health Canada

4.15 PM ID 421 IMPROVED PRODUCT CHARACTERIZATION USING NON-ANIMAL METHODS: DEVELOPMENT OF AN IMMUNOASSAY FOR DIPHTHERIA AND TETANUS VACCINES Paul Stickings

4.30 PM SESSION 121 Q&A
Lessons Learned and Practical Considerations for the Use of In Vitro Exposure Systems to Assess Respiratory Toxicity

A. Clippinger, PETA Science Consortium International e.V. and Dr L. Milchak - 3M Company

KEY LEARNINGS FROM IN VITRO VAPOR AND DIRECT LIQUID EXPOSURE STUDIES FOR ACUTE RESPIRATORY TOXICITY

Lawrence Milchak, 3M Company

APPLYING NAMS IN BMD ANALYSIS AND CFD MODELING TO ADVANCE IN VITRO INHALATION TOXICITY TESTING

M. Higuchi, US Environmental Protection Agency Office of Research and Development

USING A DRY POWDER VITROCELL SYSTEM TO EXPOSE RESPIRATORY EPITHELIAL MODELS

Vicki Stone, Heriot-Watt University

ADVANCED HUMAN 3-DIMENSIONAL TEST SYSTEMS PAIRED WITH MODERN EXPOSURE SYSTEMS: PROGRESS TOWARD RECREATING PHYSIOLOGICAL-LIKE INHALATION EXPOSURES

Holger Behrsing, IIVS, Inc.

SESSION 128 Q&A

"Proof in animals": Has journal editorial policy fallen behind advances in human-based approaches?

Biomedical scientists using the growing toolbos of human-derived, non-animal technologies have been questioned by peer reviewers or journal editors as to whether their findings have been corroborated in an animal model. Demands for a animal data to "validate" human-based approaches reinforce the dubious gold standard status of animal models for humans, and run contrary to the 3R principle that the scientific mainstream purports to embrace. This round table will bring together science leaders and journals' editors to critically examine this topic, and to draw a path forward that embraces human-focused technologies as the new mainstream.

Session chair
Marcia Triunfol, Humane Society International

ROLE OF BIOMEDICAL JOURNALS’ POLICIES IN PROMOTING THE DISSEMINATION OF THE 3RS

Laura Gribskalo, JRC, European Commission

HUMAN ORGAN CHIPS: FROM EXPERIMENTAL MODELS TO CLINICAL MIMICRY

Donald Ingber, Wyss Institute for Biologically Inspired Engineering at Harvard University

PUBLICATION BIAS: THE PROBLEM THAT NEEDS TO GO AWAY

Marcia Trowohl, Humane Society International

TO BE PROVIDED

Nicole Kleinstreuer, National Institutes of Health

CONFRONTING PUBLISHING BIAS AGAINST IN VITRO APPROACHES

Catharine Krebs, Physicians Committee for Responsible Medicine

SESSION 69 Q&A
Beyond animal welfare policy – how other areas of policy can boost non-animal alternative

Transitions are long-term processes. What is the current state of the transition towards animal-free innovation? The phase TPI is in is characterized by dynamics of build-up. What are the different push and pull factors to build up a new practice with the use of human knowledge and data and without the use of animals?

Interactive pdf to share:
Policy line of reasoning  Policy and regulations on alternatives to animal testing | Publicatie | Transitie Proefdiervrije Innovatie

In this session we will:
1. Present an interview video with characterization of the current state of the transition towards animal-free innovation and with the Dutch TPI-partners and their coming promising actions.
2. Ask the participants in a real-time poll to share their motives for development and acceptance animal-free models and methods.
3. Have an online panel discussion on motivations for animal-free innovation.

Session chair and co-chair
Jasper Wegman

ANIMAL-FREE TESTING OF CELL-BASED MEDICINAL PRODUCTS
Jan Willem van der Laan

SCIENTIFIC WORKSHOP ON NON-ANIMAL APPROACHES FOR CHEMICAL SAFETY IN CHINA: CURRENT PROGRESS AND OUTLOOK
Carl Westmoreland

REACH AND THE 3RS – REINVIGORATING EFFORTS TOWARDS THE AVOIDANCE OF VIVO TESTING
Emma Grange

ANIMAL-FREE TESTING OF CELL-BASED MEDICINAL PRODUCTS
Jan Willem van der Laan

IMPROVING ALTERNATIVE METHOD ADOPTION THROUGH TOOLS AND RESOURCES TO SUPPORT COMMUNITY KNOWLEDGE
Shannon Bell

EXPERIMENTAL MODELS IN RESEARCH: A EU-WIDE SURVEY
Lorenzo Del Pace

SESSION 313 Q&A

6.30 - 8.30 PM TUE-2
Promoting the use of 3Rs through partnership: EPAA

The session will highlight the contribution of EPAA as a cross-sector European partnership between industry and regulators to promote development and acceptance of alternative approaches. The progress of some important collaborative projects and communication activities will be presented.

Session chair
Rob Roggeband, EPAA and Vera Baumans, Utrecht University

A PUBLIC PRIVATE PARTNERSHIP FACILITATING DEVELOPMENT AND UPTAKE OF 3R APPROACHES
Giacomo Mattino’ (European Commission, DG GROW)

NEW IDEAS FOR SYSTEMIC TOXICITY: OUTCOME OF AN EPAA BLUE SKY WORKSHOP
George Daston, Procter & Gamble

HARMONISATION OF THE THREE RS IN BIOLOGICALS
KATRIN SCHUTTE, EU Commission

TOOLS TO SUPPORT APPLICATION OF PHYSIOLOGICALLY-BASED KINETIC MODELLING IN SAFETY ASSESSMENT
Judith Madden, School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University, Byrom St, Liverpool, L3 3AF, UK

EPAA EFFORTS TO PROMOTE AND BUILD CONFIDENCE ON THE USE OF 3RS
Rob Roggeband, Procter & Gamble

SESSION 26 Q&A
## PROGRAM
Tuesday 31 August 2021 - Day 7

### S300 | 6.30 - 8.30 PM | (Multi-)organ models-1 (Theme: Innovative Technologies)

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
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<tbody>
<tr>
<td>6.30 PM</td>
<td>MICROPHYSIOLOGICAL SYSTEM COCULTURE APPROACH FOR BRONCHIAL LUNG AND LIVER MODELS FOR SUBSTANCE EXPOSURE STUDIES</td>
<td>Katharina Schimek</td>
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<tr>
<td>6.45 PM</td>
<td>DEVELOPMENT OF A HUMAN BONE-ON-A-CHIP TO MODEL INTRAMEMBRANOUS OSSIFICATION IN BASIC SCIENCE AND TOXICOLOGY</td>
<td>Julia Scheinpflug</td>
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<td>7.00 PM</td>
<td>A 3D-PRINTED MICROPLATE INSERT FOR HIGH-THROUGHPUT AND ULTRA-LONG-TERM HIGH-RESOLUTION IMAGING OF LIVE HUMAN BRAIN ORGANOIDS: A NEW PLATFORM TO REPLACE ANIMAL MODELS IN BRAIN CANCER RESEARCH</td>
<td>Guillermo Alberto Gomez</td>
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<tr>
<td>7.15 PM</td>
<td>HUMAN IMMUNOCOMPETENT CHOROID-ON-CHIP: A PROMISING TOOL FOR STUDYING OCULAR SIDE EFFECTS OF BIOLOGICAL DRUGS</td>
<td>Madalena Cipriano</td>
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<tr>
<td>7.30 PM</td>
<td>A 3D AUTOLOGOUS iPSC-DERIVED HAIR BULB MODEL</td>
<td>Oussama El Baraka</td>
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<tr>
<td>7.45 PM</td>
<td>MULTI-ORGAN-CHIP DEVELOPMENTS: TOWARDS A PARADIGM SHIFT IN DRUG DEVELOPMENT</td>
<td>Ilka Maschmeyer</td>
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<td>8.00 PM</td>
<td>SESSION 300 Q&amp;A</td>
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### S301 | 6.30 - 8.30 PM | Animal welfare in practice

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<th>Time</th>
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<tr>
<td>6.30 PM</td>
<td>IMPLEMENTING CUP AND TUNNEL HANDLING IN A (LARGE) PHARMACEUTICAL RODENT FACILITY</td>
<td>Maria Kiersgaard</td>
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<tr>
<td>6.45 PM</td>
<td>AN INTERNATIONAL DATA CROWDSOURCING PROJECT TO UNDERSTAND AND MINIMISE AGGRESSION IN GROUP-HOUSED MALE LABORATORY MICE</td>
<td>Mark Prescott</td>
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<tr>
<td>7.00 PM</td>
<td>A REFINEMENT WIKI</td>
<td>Adrian Smith</td>
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<td>7.15 PM</td>
<td>CLICKER/TARGET TRAINING OF RESEARCH ANIMALS AS A REFINEMENT</td>
<td>Kathryn Bayne</td>
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<td>7.30 PM</td>
<td>THE ANIMAL PROTECTION QUALITY CERTIFICATE. KEY FIGURES FOR THE IMPROVEMENT OF ANIMAL WELFARE</td>
<td>Roberto Piastretzki</td>
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<td>7.45 PM</td>
<td>UPDATING PAIN RECOGNITION AND MANAGEMENT APPROACHES IN LABORATORY MICE AND RATS</td>
<td>Patricia Turner</td>
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<tr>
<td>8.00 PM</td>
<td>SESSION 301 Q&amp;A</td>
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Innovative Technologies, Disease, Ethics, Welfare, and Regulation, Safety

PROGRAM
Tuesday 31 August 2021 - Day 7

6.30 - 8.30 PM TUE-2 S302 Biological membrane passage in vitro models

Session chair Catherine Willett, Human Society International

Time Abstract Speakers
6.30 PM ID 227 ENGINEERING A DYNAMIC MODEL OF THE ALVEOLAR INTERFACE FOR THE STUDY OF AEROSOL DEPOSITION Roberta Nossa
6.45 PM ID 292 MODELING BLOOD-BRAIN BARRIER PERMEATION IN THE AUTOLOGOUS STEM CELL-DERIVED CHIP4 Leopold Koerig
7.00 PM ID 324 OPTIMIZATION OF AN IN VITRO PLACENTAL TRANSFER ASSAY FOR SCREENING PURPOSES Barbara Birk
7.15 PM ID 680 TOWARDS A REGULATORY APPLICATION OF Caco-2 ADVANCED INTESTINAL BARRIER MODEL. Isabella De Angelis
7.30 PM ID 844 SECRETOME CHARACTERIZATION OF 3D BRONCHIAL EPITHELIAL CULTURES TO STUDY THE ROLE OF PROTEIN CORONA ON THE FATE AND LONG-TERM EFFECTS OF NANOPARTICLES Daniel Sanchez-Guzman
7.45 PM ID 1050 PARTICLE DEPOSITION AND EFFECTS IN AN AIR-LIQUID INTERFACE LUNG MODEL: AN INTERLABORATORY COMPARISON STUDY Rob Vandebriel
8.00 PM SESSION 302 Q&A

PROGRAM
Tuesday 31 August 2021 - Day 7

6.30 - 8.30 PM TUE-2 S303 Focusing on cancer research

Session chair Kirsty Reid, EFPIA

Time Abstract Speakers
6.45 PM ID 55 3D SCAFFOLD-BASED NEUROBLASTOMA MODEL FOR EVALUATING CYTOTOXIC AND miRNA-TARGETED THERAPEUTICS Olga Piskareva
7.00 PM ID 107 REMODELING HUMAN LUNG TUMOUR COMPLEXITY IN 3D IN VITRO TUMOUR CULTURES FACILITATED AT THE AIR-LIQUID INTERFACE FOR PREDICTING THE EFFICACY OF INHALED ANTI-CANCER DRUGS IN NSCLC PATIENTS Daria Mosio
7.15 PM ID 142 CELLULAR CROSS-TALK-INDUCED SECRETION OF INTERLEUKIN-10 (IL-10) IN AN ORGANTOTYPIC HUMAN MELANOMA MODEL DIRECTS MONOCYTE DIFFERENTIATION TO AN M2-LIKE PHENOTYPE Elisabetta Michielin
7.30 PM ID 156 ALL-HUMAN, DYNAMIC, IN VITRO, 3D BLOOD BRAIN BARRIER MODELS FOR DRUG DELIVERY AND CANCER METASTASIS STUDIES. RADIAL LAMINATE PROTEIN TYPES DEFINE TEER AND TRANSIENT OPENING CAN BE DEMONSTRATED, REFLECTING HUMAN XENOGRAFT MODEL FINDINGS Geoffray John Pilkington
7.45 PM ID 506 MULTI-OmICS DATA INTEGRATION TO STUDY THE RELEVANCE OF IN VITRO DISEASE MODELS THROUGH THE CREATION OF GENOMIC INTERACTION NETWORKS Tim Kuipers

8.00 PM SESSION 303 Q&A

YOU-WC11 - WORKSHOP 4 "CONFLICT MANAGEMENT AND IMPOSTER SYNDROME - YOU ARE NOT ALONE!

Although being a researcher stands for creating new knowledge by following personal curiosity and seeking groundbreaking findings, it is also accompanied by stressful responsibilities, frequent rejection, and continuous competition and comparison with others. We are measured based on our accomplishments and these determine how far we are allowed to follow our desired career paths. Self-doubts and interpersonal conflicts are permanent companions in the competitive world of an early career scientist. This environment results in experiencing “imposter syndrome” which is characterized by feelings of inadequacy, despite evidence of success, and the fear of being exposed as a “fraud”. Moreover, as early career scientists, we require support on how to properly face conflicts that can, for example, build up between a student and their peers or even for independent junior group leaders struggling between being a focused leader and an empathetic mentor. In this workshop, speakers will provide insights on the causes and effects of imposter syndrome as well as areas of conflict potential. In addition, they will share their own experiences and potential solutions and strategies. The presentations will be followed by interactive discussion rounds to exchange perspectives and experiences. The overall goal of this session is to highlight the importance of communication, active search for help, and formation of talk rounds of early career scientists to foster exchange and mutual support - you are not alone!
Phenotypic high throughput screening in a human iPSC-derived human hepatic in vitro models reveal distinct anti-NASH potencies

Siobhan Malany, University of Florida

Induced lipid accumulation hepatocyte model of steatosis reveals inhibitors of ER-stress of PPAR agonists

Laarbeeklaan 103, 1090 Brussels, Belgium
Joost Boeckmans, Department of In Vitro Toxicology and Dermato-OF PPAR AGONISTS
Filip Beirinckx, Galapagos NV

Insulin-driven de novo lipogenesis

V. Rogiers, Innovation Centre-3Rs (IC-3Rs) and S. Malany, University of Florida

Session chair and co-chair
V. Rogiers, Innovation Centre-3Rs (IC-3Rs) and S. Malany, University of Florida

A human hepatocyte-like cell based in vitro model for hepatic insulin-driven de novo lipogenesis

Filip Beirinckx, Galapagos NV

Human hepatic in vitro models reveal distinct anti-NASH potencies of PPAR agonists

Joost Bloemkamps, Department of In Vitro Toxicology and Dermato-Cosmetology, Faculty of Medicine and Pharmacy, Vrije Universiteit Brussel, Laarbeeklaan 103, 1090 Brussels, Belgium

Phenotypic high throughput screening in a human iPSC-derived hepatocyte model of steatosis reveals inhibitors of ER-stress induced lipid accumulation

Slobhiam Malany, University of Florida

Application of an in vitro testing battery for developmental neurotoxicity (DNT) assessment in a regulatory context

Recently, an increased prevalence of neurodevelopmental disorders, including autism, is observed. While these disorders result from a combination of multiple factors, exposure to environmental chemicals could contribute to developmental neurotoxicity (DNT). Currently, there is limited information on DNT effects and this data gap cannot be overcome with the current in vivo testing. The talks will present the recent international efforts led by EFSA, OECD, JRC and US EPA, to develop a in vitro testing strategy to improve the current DNT regulatory assessment including the efforts to develop an OECD Guidance Document on the use of alternative methods for DNT evaluation.

Session chair and co-chair
A. Bal-Price, European Commission Joint Research Centre

THE INTERNATIONAL REGULATORY ROADMAP TO ENHANCE DEVELOPMENTAL NEUROTOXICITY TESTING
M. Sachana, Organisation for Economic Co-operation and Development (OECD)

A DNT IN VITRO TESTING BATTERY IN LIGHT OF AN OECD GUIDANCE DOCUMENT
E. Fritsche, JUF - Leibniz Research Institute for Environmental Medicine

EXAMPLES OF HOW DATA FROM IN VITRO DEVELOPMENTAL NEUROTOXICITY ASSAYS COULD Be USED TO MAKE DECISIONS ABOUT CHEMICAlS
T. Schafer, Biomolecular and Computational Toxicology Division Center for Computational Toxicology and Exposure US EPA

AN ADVERSE OUTCOME PATHWAY (AOP)-INFORMED INTEGRATED APPROACH TO TESTING AND ASSESSMENT (IATA) AS A TOOL TO CONDUCT A DEVELOPMENTAL NEUROTOXICITY (DNT) HAZARD CHARACTERIZATION
A. Bal-Price, European Commission Joint Research Centre

A HUMAN HEPATOCYTE-LIKE CELL BASED IN VITRO MODEL FOR HEPATIC INSULIN-DRIVEN DE NOVO LIPOGENESIS

Filip Beirinckx, Galapagos NV

A DNT IN VITRO TESTING BATTERY IN LIGHT OF AN OECD GUIDANCE DOCUMENT
E. Fritsche, JUF - Leibniz Research Institute for Environmental Medicine

AN ADVERSE OUTCOME PATHWAY (AOP)-INFORMED INTEGRATED APPROACH TO TESTING AND ASSESSMENT (IATA) AS A TOOL TO CONDUCT A DEVELOPMENTAL NEUROTOXICITY (DNT) HAZARD CHARACTERIZATION
A. Bal-Price, European Commission Joint Research Centre

A human hepatocyte-like cell based in vitro model for hepatic insulin-driven de novo lipogenesis
Asia: A place ripe for the development of 21st century science

This 90min round table will invite key regulators & government agencies from India, China, South Korea and Japan to present the strategies for investment into human biology-centric new approach methodologies in research & toxicology. Having made major progress in the regulatory aspect with respect to animal testing prohibition for cosmetics in some countries, reduction and replacement of animals for pesticide regulations in others, the stage is set for these countries to increase investment into non animal methodologies. The anticipated outcomes of the session would be to gain new insights on working towards increased investment into NAMs after regulatory acceptance of alternatives.

Session chair
C. Willet, Humane Society International

Time Abstract Speakers
3.00 PM ID 790 ASIA IS A RIPE PLACE FOR ALTERNATIVES TO ANIMAL TESTING: STATUS AND POTENTIAL IN INDIA
S. Parvatam, Centre for Predictive Human Model Systems (AIC - CCMB) India

3.15 PM ID 1110 PROMOTING ALTERNATIVES TO ANIMAL TESTING METHODS THROUGH STAKEHOLDER COLLABORATION
B. Seo, Humane Society International Korea

3.45 PM ID 484 SAFETY SCIENCES TOWARDS NON-ANIMAL TESTS IN CHINA: CURRENT STATUS AND PERSPECTIVES
X. Qu, The Society of Toxicity Testing and Alternative Methods, Chinese Environmental Mutagen Society China

4.00 PM ID 390 21ST-CENTURY TOXICOLOGY AND REGULATORY TESTING: AN UPDATE FROM JAPAN
H. Kojima, National Institute of Health Sciences Japan

4.15 PM SESSION 23 Q&A
PROGRAM
Wednesday 1 September 2021 - Day 8

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
</table>
| 3.00 PM | ID 237 | COMBINING IN VITRO AND IN SILICO MODELLING TO STUDY CYTOKINE-DRIVEN CARTILAGE DEGRADATION
Annemarie Lang |
| 3.15 PM | ID 455 | BIOPRINTING OF HUMANIZED LIVER AND LUNG MODELS FOR INFECTION STUDIES
Jens Kurreck |
Juliane Hübner |
| 3.45 PM | ID 730 | AUTOMATING MULTI-ORGAN-CHIP ASSAYS AND ANALYSIS FOR IMPROVED STANDARDIZATION AND REPRODUCIBILITY
Juliane Hübner |
| 4.00 PM | ID 807 | ENDOTHELUM RESPONSE TO IRON NANOMEDICINE IN STATIC VERSUS DYNAMIC IN VITRO VASCULAR MODEL
Niusha Nikravesh |
| 4.30 PM | SESSION 304 G6A | |

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
</table>
| 3.00 PM | ID 86 | CRITICAL INCIDENT REPORTING SYSTEM IN LABORATORY ANIMAL SCIENCE - CIRS-LAS
Sabine Juliane Bischoff |
| 3.15 PM | ID 131 | CARING FOR THOSE CARING FOR RESEARCH ANIMALS: DEVELOPING A GLOBAL CORPORATE RESILIENCY BUILDING PROGRAM
Judy Murray |
| 3.30 PM | ID 630 | IRON FIST & VELVET GLOVE: EXPANDING THE IMPLEMENTATION OF THE 3RS
John R Baumann |
| 3.45 PM | ID 746 | PROMOTING TRANSPARENCY IN PRECLINICAL RESEARCH: PREREGISTRATION OF ANIMAL STUDIES ON AN ONLINE PLATFORM
Aina Cervera i Barea |
| 4.00 PM | ID 883 | BEYOND PROGRAM REVIEW/POST APPROVAL MONITORING: DEVELOPING AND IMPLEMENTING A QUALITY IMPROVEMENT PROGRAM FOR LABORATORY ANIMAL RESEARCH PROGRAM
John Baumann |
| 4.15 PM | ID 972 | THE BEYOND ANIMAL TESTING INDEX: HOW TO ASSESS YOUR INSTITUTES CONTRIBUTION TO ANIMAL FREE INNOVATION AND THE 3R’S?
Cyrille Krul |
| 4.30 PM | SESSION 306 G6A | |

6.30 - 8.00 PM YOU-WC11 - WORKSHOP 5
“LET THE STARS SHINE - FIRE PRESENTATIONS GIVEN BY THE 3R EARLY CAREER SCIENTIST AWARD FINALISTS”
Wednesday 1 September 2021 - Day 8

**6.15 - 6.30 PM**
WC11 TV live from the studio

**KEYNOTE:**

**DR. GER JANSEN**
**Philips**

Ger Janssen has a PhD in Applied Physics from Eindhoven University of Technology in the Netherlands. He joined Philips in 2001 and in all his responsibilities in the company computational modelling is a recurring theme, in which he has now over 20 years of experience.

He is currently head of the Digital Twin department in Philips Research and since 2018 also Program Manager Patient Digital Twin. In these roles he is shaping the digital twin activities of Philips from R&D to operational and clinical space. For these activities the guiding principle is that all Philips solutions should address the quadruple aim: better health outcome, better clinical space. For these activities the guiding principle is that all Philips solutions should address the quadruple aim: better health outcome, better clinical space, and in which he has now over 20 years of experience.

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**PROGRAM**  
**Wednesday 1 September 2021 - Day 8**

**6.30 - 8.30 PM WED-2 564**  
skills4science  
Young researchers dedicate rightfully most of their time to core knowledge production via laboratory experiments, reading peer-review literature, publishing own results, attending conferences whenever possible as well as undertaking trainings on writing grants, papers among many other activities. However, the promoter argue here that restricting them to this unique set of activities is jeopardizing creativity and reducing awareness of a more complex picture in science. Other fields linked with social sciences, including scientometrics and epistemological areas covered during conferences and continuous education, may contribute to a more productive working environment for young researchers. This session would be the opportunity to kick-off the discussion and tackle some of these “secondary” topics. This was first covered in the following article “The use of social media in scientific research and creative thinking” by Busquet & Vinken https://doi.org/10.1016/j.ijit.2019.04.006

Sponsored by Altertox Academy

**Session chair**  
Francois Busquet, Altertox and Nuno Franco, i3s - University of Porto

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.30 PM</td>
<td>ID 257 SMART USE OF SOCIAL MEDIA IN 3RS</td>
<td>Francois Busquet, Altertox</td>
</tr>
<tr>
<td>6.45 PM</td>
<td>ID 916 DATA MANAGEMENT IN A CHANGING TOXICITY TESTING PARADIGM</td>
<td>Nynke Kramer, Utrecht University</td>
</tr>
<tr>
<td>7.00 PM</td>
<td>ID 111 FROM RESEARCH TO INNOVATION: BUSINESS IN LIFE SCIENCES.</td>
<td>Marco Straccia, PRESCI by SCIENCEiSTRATEGY SL</td>
</tr>
<tr>
<td>7.15 PM</td>
<td>ID 641 JRS LEADERSHIP FOR YOUNG RESEARCHERS</td>
<td>Nuno Henrique Franco, i3s, Universidade do Porto</td>
</tr>
<tr>
<td>7.30 PM</td>
<td>ID 848 REGULATORY SCIENCE: INDUSTRY, RESEARCH AND INNOVATION FOR THE TESTING OF SUBSTANCES</td>
<td>David Demortain, INRAE, Laboratoire Interdisciplinaire Sciences Innovations Societes</td>
</tr>
<tr>
<td>7.45 PM</td>
<td>ID 235 GENDER INEQUALITY IN SCIENCE - FINDING THE END OF THE RAINBOW</td>
<td>Annemarie Lang, Department of Rheumatology and Clinical Immunology, Charité-Universitätsmedizin Berlin</td>
</tr>
</tbody>
</table>

8:00 PM  
SESSION 64 Q&A
## PROGRAM

**Wednesday 1 September 2021 - Day 8**

### S305 (Multi-)organ models-3 6.30 - 8.30 PM

**Session chair**
Janny van den Eijnden-van Raaij, hDMT

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.30 PM</td>
<td>ID 151 BIOENGINEERED 3-DIMENSIONAL LUNG ORGANOIDS AS AN ALTERNATIVE TO PATIENT-DERIVED XENOGRRAFT MODELS OF SMALL CELL LUNG CANCER</td>
<td>Chandani Sen</td>
</tr>
<tr>
<td>6.45 PM</td>
<td>ID 588 HUMAN LIVER-PANCREAS-HEART MICROPHYSIOLOGICAL SYSTEM FOR STUDYING CARDIO-METABOLIC DISORDERS</td>
<td>Liisa Vilén</td>
</tr>
<tr>
<td>7.00 PM</td>
<td>ID 636 ESTABLISHMENT OF A HUMAN MULTI-ORGAN-CHIP PLATFORM TO REPLACE ANIMAL TRANSPLANT MODELS FOR PRECLINICAL EVALUATION OF TREG CELL THERAPIES</td>
<td>Isabell Driesux</td>
</tr>
<tr>
<td>7.15 PM</td>
<td>ID 684 EXPLORING 3D BIOPRINTING TECHNOLOGY FOR THE DEVELOPMENT OF COMPLEX RECONSTRUCTED SKIN MODEL WITH HAIR FOLLICLE STRUCTURE AND AUTOMATION OF THE FABRICATION OF HAIR FOLLICLE SPHEROIDS</td>
<td>Carolina Motter Catarino</td>
</tr>
<tr>
<td>7.30 PM</td>
<td>ID 797 ENHANCING PRECLINICAL PREDICTIONS FOR NEURODEGENERATIVE DISEASES USING BRAIN-ON-CHIP MODELS</td>
<td>Alex Bastiairs</td>
</tr>
<tr>
<td>7.45 PM</td>
<td>ID 869 CRACK IT: 3D HIPSC-DERIVED LAMINATED RETINAL MODEL AS A TOOL FOR TOXICOLOGY AND DRUG DISCOVERY STUDIES</td>
<td>Cathy Vickers</td>
</tr>
</tbody>
</table>

**8.00 PM** SESSION 305 Q&A

### S307 3Rs in disease research 6.30 - 8.30 PM

**Session chair**
LAURA CRIBALDO, JRC Europe

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.30 PM</td>
<td>ID 205 SERUM MICRORNA SIGNATURES AS “LIQUID BIOPSIES” FOR INTERROGATING HEPATOTOXIC MECHANISMS AND LIVER PATHOGENESS</td>
<td>Julian Krauskopf</td>
</tr>
<tr>
<td>6.45 PM</td>
<td>ID 229 THE HUMAN-BASED IN VITRO 3D ARTHRITIC JOINT MODEL FOR PRECLINICAL DRUG TESTING</td>
<td>Alexandra Damerau</td>
</tr>
<tr>
<td>7.00 PM</td>
<td>ID 716 REPLACING THE NEED FOR BOVINE BLOOD PRODUCTS IN EARLY STAGE OPTIMISATION OF CARDIAC ASSIST DEVICES: IMPROVING THE INTERNATIONAL STANDARD</td>
<td>Antony P McNamees</td>
</tr>
<tr>
<td>7.15 PM</td>
<td>ID 748 UNDERSTANDING NANOMATERIAL RISKS IN PULMONARY INFECTION: EFFECTS OF GRAPHENE RELATED MATERIALS ON HEALTHY AND STREPTOCOCCUS PNEUMONIAE INFECTED 3D RECONSTITUTED HUMAN LUNG CELLS</td>
<td>Savvina Chortarea</td>
</tr>
<tr>
<td>7.30 PM</td>
<td>ID 940 A HUMAN iPSC-BASED MICROPHYSIOLOGICAL MODEL OF THE LIVER TO STUDY THE IMPACT OF HEPATIC STELLATE CELLS ON NASH DEVELOPMENT</td>
<td>Martin Raasch</td>
</tr>
<tr>
<td>7.45 PM</td>
<td>ID 1035 TISSUE ENGINEERED MODELS OF FIBROTIC CARDIAC TISSUE FOR PRECLINICAL VALIDATION OF THERAPIES</td>
<td>Valeria Chiono</td>
</tr>
</tbody>
</table>

**8.00 PM** SESSION 307 Q&A
**PROGRAM**

**Wednesday 1 September 2021 - Day 8**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Title</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.30 PM</td>
<td>ID 303</td>
<td>THE INTEGRATION OF IN VITRO CHEMICAL TRANSPLACENTAL PASSAGE INTO A GENERIC PBK MODEL FOR PREGNANCY</td>
<td>Styliani Fragki</td>
</tr>
<tr>
<td>6.45 PM</td>
<td>ID 442</td>
<td>IN VITRO TO IN VIVO EXTRAPOLATION FOR DEVELOPMENTAL TOXICITY POTENCY OF VALPROIC ACID ANALOGUES</td>
<td>Xiaoqing Chang</td>
</tr>
<tr>
<td>7.00 PM</td>
<td>ID 658</td>
<td>IN VITRO-IN SILICO BASED ASSESSMENT OF SPECIES DIFFERENCES IN KINETICS. TOWARDS HARMONIZATION OF IN VITRO CLEARANCE STUDIES</td>
<td>Jochem Louisse</td>
</tr>
<tr>
<td>7.15 PM</td>
<td>ID 781</td>
<td>BOTTOM-UP PHYSIOLGICALLY-BASED TOXICOGENIC MODELLING OF PERFLUOROCYCANOIC ACID</td>
<td>James Chun Yip Chan</td>
</tr>
<tr>
<td>7.30 PM</td>
<td>ID 781</td>
<td>VALIDATION OF A BOTTOM-UP PBPK MODEL PREDICTION OF HEPATIC CONCENTRATIONS OF ROSUVASTATIN</td>
<td>Shawn Tan</td>
</tr>
<tr>
<td>7.45 PM</td>
<td>ID 918</td>
<td>COMPARING MODEL PREDICTIONS AND ANALYTICALLY DETERMINED TEST CHEMICAL DISTRIBUTIONS IN VITRO</td>
<td>Nynke Krammer</td>
</tr>
</tbody>
</table>

**8.00 PM**

**SESSION 307 Q&A**

**8.30 - 9.30 PM**

**WC11 TV - Talk show**

Talkshow 3 will focus on New technologies and the use of human-derived material. The background here is that many biomedical laboratories are developing their own organ-on-a-chip system. There may be a need for separating the good from the bad, for standardization, and for thorough evaluation of the advantages and limitations of such approaches. Furthermore, such methods are based on human derived materials which have ethical implications.

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**PROGRAM**

**Thursday 2 September 2021 - Day 9**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Title</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>2.30 PM</td>
<td></td>
<td>REVERSE TRANSLATION: Maximizing clinical relevance while reducing the need for preclinical data</td>
<td>J. Wagner, ForsiteCapital</td>
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<tr>
<td>3.00 PM</td>
<td></td>
<td>ABSTRACT ID - DEVELOPMENT OF NOVEL BIOMARKERS TO ACCELERATE DRUG DEVELOPMENT</td>
<td>J. Sauer, Critical Path Institute</td>
</tr>
<tr>
<td>3.30 PM</td>
<td></td>
<td>ABSTRACT ID - CALPROTECTIN IN IBD: “NEW TRICKS OF AN OLD DOG”</td>
<td>J. Aubrecht, Takeda</td>
</tr>
<tr>
<td>3.45 PM</td>
<td></td>
<td>ABSTRACT ID - METABOLOMIC SIGNATURES REVEAL COMPLEX INTERACTIONS OF MICROBIOME AND HOST IN HEALTH AND DISEASE</td>
<td>H. Li, Georgetown University</td>
</tr>
<tr>
<td>4.00 PM</td>
<td></td>
<td>SESSION 234 Q&amp;A</td>
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</tbody>
</table>
PROGRAM
Thursday 2 September 2021 - Day 9

3.00 - 5.00 PM

Animal Experimentation: Working Towards a Paradigm Change

New human biology-based tools should facilitate a strong shift away from animal experimentation. However, in research, animals are still widely seen as the default option, even though interspecies differences compromise translation to the humans. In this workshop we discuss some of the obstacles and driving forces of change. We address the vague public policy provisions regarding animal replacement: the limited education and training possibilities on human-relevant approaches; insufficient funding for the development of non-animal models; psychological lock-in and enmeshment in science; and public misinformation about animal experimentation, as well as how education, funding redeployment, and political action can drive change.

Session chair and co-chair
M. Stephens, Johns Hopkins Bloomberg School of Public Health
K. Hermann, Johns Hopkins Bloomberg School of Public Health

Time | Abstract | Speakers
--- | --- | ---
3.00 PM | ID 738 BARRIERS TO THE IMPLEMENTATION OF ANIMAL-FREE ALTERNATIVES AND HOW TO OVERCOME THEM | K. Taylor, Cruelty Free International
3.15 PM | ID 852 EDUCATING FUTURE SCIENTISTS AND RAISING PUBLIC AWARENESS ON ANIMAL-FREE EXPERIMENTATION | K. Hermann, Johns Hopkins Bloomberg School of Public Health
3.30 PM | ID 721 POLITICAL CAMPAIGNING: WHERE SCIENTIFIC AND ETHICAL ARGUMENTS MEET PUBLIC POLICY | E. McIvor, People for the Ethical Treatment of Animals (PETA)
3.45 PM | ID 810 STAKEHOLDER COLLABORATION TO IMPLEMENT REGULATORY AND POLICY CHANGE FOR DRUG DEVELOPMENT | E. Baker, Physicians Committee for Responsible Medicine (PCRM)
4.00 PM | ID 518 BREAKING THE LOCK-IN TO ANIMAL RESEARCH WITHIN ACADEMIA | P. Pound, Safer Medicines Trust
4.15 PM | ID 832 RESEARCH AND TESTING WITHOUT ANIMALS: WHERE ARE WE NOW AND WHERE ARE WE HEADING? | T. Hartung, Johns Hopkins Bloomberg School of Public Health
4.30 PM | SESSION 216 Q&A

PROGRAM
Thursday 2 September 2021 - Day 9

3.00 - 5.00 PM

Harnessing the power of the data to improve systemic toxicity prediction: multisectoral perspectives

Over the last decade, triggered by the fast development of IT technologies, especially through the explosion of calculation power and data generation/storage capacity, a data revolution has been happening. Today outcomes of this ongoing evolution can be seen in almost all industrial sectors: health, car, beauty, fashion, game & entertainment, while little by little, big data, algorithms, artificial intelligence do reveal the power lying in data capture and exploitation. At the same time, in the toxicology field (whatever the industrial sector or the geographical region) the need for better toxicity prediction has never been so high. In the Pharma industry, a low drug development success rate of 2% raises questions about factors (including low toxicity prediction) at the origins of such innovation crisis. In the cosmetics industry, the animal testing ban which took place in 2013 in Europe for its final stage left the safety disciplines with a bold gap and the incapacity in specific circumstances to predict systemic toxicity and develop new ingredients. In the chemical sector, much attention has been placed recently on data-poor chemicals that are already in commerce and may have potential contributions to human diseases. Hence there is a high need to better substantiate toxicity profiles of new or already marketed chemical.

In several industrial and public sectors, various initiatives have been fostering the development of information systems providing access to databases. Computational tools and workflows for better toxicity prediction. Some initiatives have explored open innovation paths combining resources from industrial and public sectors. For, under the auspices of Innovation Medicines Initiative, paved the way to pharmacy industry propriety non-clinical data sharing on a large scale supporting the development of toxicity prediction algorithms. Research initiatives are integrating “2 tools like Cosmetics from SEURATI, CEToxGPS from cosmetics’ Europe Long Range Science Strategy, SEURATI gathered data from cosmetics and led to the establishment of cosmetics ingredients safety database. In the chemical sector similar considerations are made in different initiatives like CETIc’s chemoformatic platform and the US EPA’s chemistry dashboard. The AMBIT system was built and includes data from the EU REACh and the Openfood CEFIC’s chemoinformatic platform and the US EPA’s chemistry dashboard. The AMBIT system was built and includes data from the EU REACh and the Openfood databases from the European food safety agency. Learning on those 1st steps, some 2nd generation initiatives have been designed in order to harness even more the power of data, leading to better dissemination of non-animal data and improved toxicity prediction. This session will open windows on those cutting edge initiatives, share their progress and explore how they could be beneficial across sectors.

Session chair
S. Dhalluin, L’Oreal

Time | Abstract | Speakers
--- | --- | ---
3.00 PM | ID 41 EXPLOITING SAFETY DATA SHARED BY PHARMACEUTICAL INDUSTRY: THE ETRANSAFE PROJECT | M. Pastor, University Pompeu Fabra
3.15 PM | ID 31 TOWARDS VIRTUAL CONTROL GROUPS FOR ANIMAL TOXICITY STUDIES – AN ETRANSAFE INITIATIVE | T. Steger-Hartmann, Bayer AG
3.30 PM | ID 45 ENABLING CHEMICAL SUBSTANCE DATA INTEGRATIVE ANALYSIS AND APPLICATIONS | N. Jeliazkova, Ideoconsult Ltd
3.45 PM | ID 785 DATA DRIVEN COMPUTATIONAL MODELLING TO SUPPORT SAFETY ASSESSMENT OF COSMETICS INGREDIENTS | M. Cronin, Liverpool John Moores University
4.00 PM | ID 30 SYSTEMIC TOXICITY PREDICTIONS USING IN VIVO AND IN SILICO APPROACHES | R. Judson, NICHT – US
4.15 PM | ID 275 EVALUATION OF A NEW APPROACH METHODOLOGY TOOLBOX FOR THE NEXT GENERATION RISK ASSESSMENT OF SYSTEmIC TOXICITY | Sophie Cable
4.30 PM | SESSION 185 Q&A
### PROGRAM
#### Thursday 2 September 2021 - Day 9

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00 PM</td>
<td>THE CLINICAL TRANSLATION OF HIGH-PROFILE ANIMAL-BASED RESEARCH REPORTED IN THE UK NATIONAL PRESS</td>
<td>Jarrod Bailey</td>
</tr>
<tr>
<td>3.15 PM</td>
<td>A MICROPHYSIOLOGICAL SYSTEM OF HUMAN PANCREATIC ISLET MICROTISSUES AND LIVER SPHEROIDS FOR MODELLING DIABETES MELLITUS</td>
<td>Sophie Bauer</td>
</tr>
<tr>
<td>3.30 PM</td>
<td>EXPLORATION OF AN ANIMAL-FREE DRUG DEVELOPMENT APPROACH FOR TOMORROW’S MEDICINE</td>
<td>Roeland Hanemaaijer</td>
</tr>
<tr>
<td>3.45 PM</td>
<td>INVESTIGATING EPILEPSY USING A COMBINATION OF MATHEMATICAL MODELLING AND VOLUNTARY HUMAN DATA AS A VIABLE REPLACEMENT FOR ANIMAL MODELS</td>
<td>Andre Peterson</td>
</tr>
<tr>
<td>4.00 PM</td>
<td>ROLE OF NON-ANIMAL TECHNOLOGIES IN COVID-19 RESEARCH</td>
<td>Dilyana Filipova</td>
</tr>
<tr>
<td>4.15 PM</td>
<td>MODEL OF IMMUNE CELL extravasation and migration using a microfluidic hydrogel barrier</td>
<td>Lisette van Os</td>
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<tr>
<td>4.30 PM</td>
<td>SESSION 308 Q&amp;A</td>
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### PROGRAM
#### Thursday 2 September 2021 - Day 9

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00 PM</td>
<td>“MY ANIMAL RESEARCH: EXPERIMENTAL DESIGN”: A PERSONALIZED, PRACTICE-BASED LEARNING TRACK FOR PHD STUDENTS</td>
<td>Ivo Tiebosch</td>
</tr>
<tr>
<td>3.15 PM</td>
<td>IMPLEMENTATION OF THE 5RS (REPLACEMENT, REDUCTION, REFINEMENT, RESPONSIBILITY AND RESPECT) IN LABORATORY ANIMAL SCIENCE EDUCATION &amp; TRAINING COURSES IN THE UNIVERSITY OF CAPE TOWN, SOUTH AFRICA</td>
<td>Janet McCallum</td>
</tr>
<tr>
<td>3.30 PM</td>
<td>A COMPARISON OF TRAINING STANDARDS AMONGST INTERNATIONAL COLLEGES OF LABORATORY ANIMAL MEDICINE</td>
<td>Patricia Turner</td>
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<tr>
<td>3.45 PM</td>
<td>HIGHLIGHTING MODERN APPROACHES THROUGH EDUCATION AND TRAINING</td>
<td>Esther Haugabrooks</td>
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<tr>
<td>4.00 PM</td>
<td>PROMOTE THE CONSENSUS OF 3RS IN CHINA THROUGH TRANSLATIONAL OF THE ACADEMIC AND INDUSTRIES</td>
<td>Tingting Luo</td>
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<tr>
<td>4.15 PM</td>
<td>THE EDUCATION &amp; TRAINING PLATFORM FOR LABORATORY ANIMAL SCIENCE (ETPLAS) – A REFERENCE FOR LABORATORY ANIMAL SCIENCE AND 3R TRAINING</td>
<td>Nuno Henrique Franco</td>
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<tr>
<td>4.30 PM</td>
<td>SESSION 310 Q&amp;A</td>
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</tr>
</tbody>
</table>
### PROGRAM
Thursday 2 September 2021 - Day 9

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>5.00 - 8.00 PM</td>
<td><strong>PLENARY SESSIONS</strong></td>
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<tr>
<td>5:00 - 5:15 PM</td>
<td>WC11 TV live from the studio</td>
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<td>5:15 - 6:15 PM</td>
<td><strong>KEYNOTE:</strong> PROF. JOSEPH WU</td>
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<td><strong>Stanford Cardiovascular Institute</strong></td>
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<td>Joseph C. Wu, MD, PhD is Director of the Stanford Cardiovascular Institute and Simon H. Stertzer, MD, Professor of Medicine and Radiology at the Stanford School of Medicine. Dr. Wu received his MD from Yale University School of Medicine. He trained in internal medicine and cardiology at UCLA followed by a PhD in the Dept of Molecular Pharmacology.</td>
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<td>His lab works on biological mechanisms of patient-specific and disease-specific induced pluripotent stem cells (iPSCs). The main goals are to (i) understand basic cardiovascular disease mechanisms, (ii) accelerate drug discovery and screening, (iii) develop ‘clinical trial in a dish’ concept, and (iv) implement precision cardiovascular medicine for prevention and treatment of patients.</td>
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<td>Dr. Wu has received numerous awards, including National Institutes of Health (NIH) Director’s New Innovator Award, NIH Roadmap Transformative Award, American Heart Association (AHA) Innovative Research Award, Presidential Early Career Award for Scientists and Engineers given out by President Obama, AHA Established Investigator Award, Burroughs Wellcome Foundation Innovation in Regulatory Science Award, AHA Merit Award, and AHA Distinguished Scientist Award. Dr. Wu serves on the Scientific Advisory Board for the Keystone Symposia, FDA Cellular, Tissue, and Gene Therapies Advisory Committee, AHA National Board of Directors, Chair of the AHA Basic Cardiovascular Science Council, and Chair of the AHA National Research Committee.</td>
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<td>Dr. Wu is an elected member of American Society of Clinical Investigators (ASCI), Association of University Cardiologists (AUC), American Institute for Medical and Biological Engineering (AIMBE), American Association for the Advancement of Science (AAAS), American Association of Physicians (AAP), and National Academy of Medicine (NAM).</td>
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<td>6:15 - 6:30 PM</td>
<td>WC11 TV live from the studio</td>
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<td>6:30 - 7:30 PM</td>
<td><strong>Björn Ekwall Memorial Fund (BEFM) Award</strong></td>
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<td>6.30 - 8.00 PM</td>
<td><strong>WC11 - Award ceremony</strong></td>
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<td>7:00 PM</td>
<td><strong>ALTEX Prize</strong></td>
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<td>7:10 PM</td>
<td><strong>CATAT / Charles-River Animal Welfare Award</strong></td>
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<td>7:25 PM</td>
<td><strong>JSAAE Award</strong></td>
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<tr>
<td>7:30 PM</td>
<td><strong>You-WC11 Awards</strong></td>
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<tr>
<td>8:00 - 8:45 PM</td>
<td>WC11 TV - Closing ceremony live from the studio</td>
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</table>
Dear early career scientists, young investigators, and those young at heart,

We look forward to welcoming you during our YOU WC11 events, which will accompany the upcoming virtual WC11. During the last months, we drafted and finalized a sophisticated program for YOU intending to boost and shape your career path within the field of 3Rs. From experience, we all know that networking and collaborating is one of the most powerful tools within research and also one of the most fun parts! Although we are not able to meet in person and go for a pub crawl as initially intended - we came up with a variety of events and workshops which will allow you to get in contact with other early career scientists and also experienced peers in the field to establish and build your professional network. Thus - don’t miss to join our Mentorship Journey, Speed Collaborating Session and Quiz Night! It will be a blast!

In addition to this, we will provide you with insights on publishing and different career paths - presented for YOU by experts in the field. Moreover, a pre-recorded, structured debate will tackle the most urgent topics that are challenging the expansion of the 3Rs - these concerns are our responsibility as Next Generation 3R Scientists! And finally, not to forget - although we all love being researchers, the job also comes with stressful responsibilities, frequent rejection, and continuous competition and comparison with others. Terms like “imposter syndrome” are not unknown and conflict management skills restore our survival. Thus, join our workshop on these topics - let’s learn from others and join forces - because YOU are not alone!

All workshops are open to all early career scientists and those young at heart. Most of the workshops consist of a pre-recorded presentation, followed by an interactive session on Zoom allowing for discussion and interactions in breakout rooms. And last but not least, we are happy to provide 3R Early Career Scientist Awards sponsored by AniMatch UG (haftungsbeschränkt; topics: Refine/Reduce) and the Physicians Committee for Responsible Medicine (topic: Replace). Our pre-selected finalists will have the opportunity to perform a live pitch of their poster or oral presentation during our “Let the Stars Shine” workshop. Watch out for e-mails before the Congress - maybe YOU are one of the finalists!

Stay safe and see YOU soon!

Your YOU WC11 Organizing Team
(Annemarie, Alexandra, Janine, Julia, Moritz & Frank)

DO YOU REMEMBER? IMPRESSIONS FROM OUR YOU WC10 EVENTS IN SEATTLE 2017?
Find the full report here (PDF).

POSTERS
Theme 1: Safety

- PS IN VITRO APPROACH FOR ASSESSING RESPIRATORY TOXICITY IN HUMAN LUNG CELLS
  Amy Clippinger, PETA Science Consortium International (ABSTRACT ID: 43)
- P20 USG & RJ LEE IN-VITRO STUDY ON THE BIOPERSISTENCE OF RESPIRABLE MINERAL FIBERS WITH EXISTING AND REFINED TEST METHODS
  Keith Rickabaugh, R2 Lee Group (ABSTRACT ID: 116)
- P22 WORKSHOP ON THE IMPLEMENTATION OF NEXT GENERATION RISK ASSESSMENT (NGRA) FOR SYSTEMIC TOXICITY
  Mabel Cotter, Unilever (ABSTRACT ID: 119)
- P23 THE EX VIVO EYE IRRITATION TEST (EVEIT) SYSTEM IN THE DISTINCTION BETWEEN SLIGHT AND SEVERE CORROSIVES
  Norbert Schrage, Aachen Centre of Technology Transfer in Ophthalmology, (ACTIO e. V.), Aachen, Germany (ABSTRACT ID: 124)
- P28 RETHINKING CARCINOGENICITY ASSESSMENT FOR AGROCHEMICALS
  Gina Hilton, PETA Science Consortium International e.V. (ABSTRACT ID: 129)
- P29 DIFFERENTIAL INFLUENCE OF STREPTOCOCCUS MITIS ON HOST RESPONSE TO METALS IN RECONSTRUCTED HUMAN SKIN AND ORAL MUCOSA
  Sue Gibbo, Amsterdam UMC & ACTA (ABSTRACT ID: 130)
- P30 A NOVEL STRATEGY COMBINING ITS AND READ-ACROSS TO PREDICT THE SIGN SENSITIZATION POTENCY OF CHEMICALS
  Kanako Nakayama, Kao Corporation (ABSTRACT ID: 175)
- P31 A VALIDATION STUDY OF THE JATA-BASED READ-ACROSS IN NEPHROTOXICITY OF AMINOPHENOLS
  KIETA YOSHÍHARA, Kao Corporation (ABSTRACT ID: 177)
- P35 A NOVEL MICROFLUIDIC PLATFORM FOR PULMONARY NANOFAIR EXPOSURE
  Horia Vintila, Technical University of Berlin - TissUse GmbH (ABSTRACT ID: 192)
- P36 NEXT GENERATION RISK ASSESSMENT OF HUMAN EXPOSURE TO ANTIANDROGENS USING NEWLY DEFINED COMPARATIVE COMPOUND VALUES
  Tessa van Tongeren, Wageningen University and Reserach (ABSTRACT ID: 193)
- P37 RAINBOWFLOW CHIP: AN IMPEDANCE-BASED BIOSENSOR FOR CHEMICAL HAZARD ASSESSMENT WITH FISH CELL LINES AT ITS CORE
  Jenny Maner, Eawag (ABSTRACT ID: 200)
- P38 VERIFICATION OF THE APPLICABLE DOMAIN OF REACTIVE OXYGEN SPECIES (ROS) ASSAY FOR DEVELOPING PHOTOSAFETY COSMETIC INGREDIENTS
  TAKUMI NUKAGA, SHISEIDO (ABSTRACT ID: 201)
- P39 SKINETHIC™ HCE TIME-TO-TOXICITY THE FIRST INDIVIDUAL METHOD FORMALLY CONSIDERED BY THE OECID FOR DISCRIMINATING ON ITS OWN THE THREE UN GHS OCULAR HAZARD CATEGORIES
  Kanako Nakayama, Kao Corporation (ABSTRACT ID: 219)
- P40 COSMETICS EUROPE EYE PROGRAM APPLICATION OF TWO DEFINED APPROACHES FOR OCULAR TOXICITY PREDICTIONS BASED ON IN VITRO BOTTOM-UP APPROACH ON 4 CASE STUDIES
  Nathalie Alépée, L'Oréal (ABSTRACT ID: 221)
- P41 THE BOTANICAL SAFETY CONSORTIUM’S STRATEGY FOR DEVELOPING A ROBUST FRAMEWORK OF GENOTOXICITY ASSAYS FOR SAFETY ASSESSMENT OF BOTANICAL SUBSTANCES
  Kristine Witt, NIEHS/DNTP (ABSTRACT ID: 223)
- P42 NEW INSIGHTS IN READ ACROSS USING NEW APPROACH METHODS
  Catherine Mahony, Procter & Gamble Technical Centres Ltd, Reading, UK (ABSTRACT ID: 247)
- P43 ASSESSING THE REPRODUCIBILITY OF PUBLISHED PHYSIOLOGICALLY-BASED KINETIC MODELS
  Courtney Thompson, Liverpool John Moores University (ABSTRACT ID: 248)
- P44 USE OF 3D HUMAN LIVER MICROTISSUES TO ASSESS HEPATOTOXICITY OF BIOLOGICS
  Annie Delaunois, UCB Biopharma SRL (ABSTRACT ID: 253)

This list of posters was made a few weeks ago and therefore may not be up to date. The most up-to-date list can be found in the WC11 Virtual Event Platform.
• P96 DISRUPTION OF CELLULAR MIGRATION/ADHESION AS COMMON KEY EVENT IN DRUG-INDUCED LIVER INJURY: OPTIONS FOR NEW IN VITRO TESTING STRATEGIES
Raymond Peters, Hogeschool Utrecht and Utrecht University (ABSTRACT ID: 254)

• P97 USE OF A DYNAMIC SKIN AND LIVER CO-CULTURE MODEL TO EFFECT THE IMPACT OF APPLICATION ROUTE ON THE METABOLISM OF THE HAIR DYE 4-AMIN-2-HYDROXYTOLUENE
Thi Phuong Tao, TissUse GmbH (ABSTRACT ID: 256)

• P98 UPDATED DERMAL SENSITISATION THRESHOLDS DERIVED USING AN IN SILICO EXPERT SYSTEM AND AN EXPANDED LOCAL Lymph Node assay DATABASE
Maria Cynl Chilton, Usha Limited (ABSTRACT ID: 262)

• P99 NEXT GENERATION RISK ASSESSMENT APPROACH FOR INHALATION EXPOSURES POLYMER CASE STUDIES
Tonia Baltazar, Unilever (ABSTRACT ID: 263)

• P100 IDENTIFYING AND CHARACTERIZING STRESS PATHWAYS OF CONCERN FOR CONSUMER SAFETY IN NEXT GENERATION RISK ASSESSMENT
Maria Baltazar, Unilever (ABSTRACT ID: 264)

• P102 PROPOSAL OF A NEW APPLICATION DOMAIN OF VITRIGEL-EYE (EYE IRRITANCY TEST) METHOD ON UTILIZING THE PH LEVEL AND LIGHT ABBRORBANCE OF TEST CHEMICALS
Hirokuki Yamaguchi, National Agriculture and Food Research Organization, Institute of Agrobiological Sciences, Tsukuba, Japan, Kanto Chemical Co., Inc. (ABSTRACT ID: 269)

• P104 A NEXT GENERATION RISK ASSESSMENT CASE STUDY FOR COUMARIN IN HYPOTHETICAL COSMETIC PRODUCTS
Sophie Cable, Unilever (ABSTRACT ID: 273)

• P115 PRIMARY OR PSFC-DEERIVED CELL-BASED CYTOCITOLOGY ASSAYS TO ASSESS POTENTIAL SAFETY RISKS OF ENGINEERED T CELL THERAPIES IN VITRO
Marco Guadagnoli, Charles River Laboratories (ABSTRACT ID: 295)

• P116 GENERATION OF NOVEL, INTEGRATED AND INTERNATIONALLY HARMONISED APPROACHES FOR TESTING METABOLISM DISRUPTING COMPOUNDS (GOLMAT)
Sebastian Hoffmann, seh consulting + services (ABSTRACT ID: 296)

• P121 ENHANCEMENT OF A RISK ASSESSMENT METHOD AND THRESHOLD OF TOXICOLOGICAL CONCERN (TTC) CONCEPT FOR SKIN SENSITIZATION BY NON-ANIMAL APPROACHES
Takao Ashikaga, Japanese Institute of Health Sciences, Japan (ABSTRACT ID: 305)

• P124 NEW APPROACH FOR SYSTEMIC TOXICITY HAZARD ASSESSMENT BASED ON ALTERNATIVE METHODS TO ANIMAL TESTING IN SUPPORT OF SAFETY DECISION-MAKING
Emile BARBEAU, L'Oréal (ABSTRACT ID: 311)

• P128 DECODINASE 1 IN HUMAN LIVER MICROSOMES IS INHIBITED BY ORGANIC AND INORGANIC GOLD COMPOUNDS AND GOLD NANOPIRICLES
Andrea Weber, BASF SE (ABSTRACT ID: 316)

• P129 THE-THRESHOLD OF TOXICOLOGICAL CONCERN (TTC) IS A PRAGMATIC RISK ASSESSMENT TOOL FOR THE SAFETY ASSESSMENT OF COSMETIC PRODUCTS WITH LOW CONSUMER EXPOSURE
Mustafa Varçın, Cosmetics Europe (ABSTRACT ID: 317)

• P130 A NEW GROWTH-FACTOR FREE HUMAN CELL BASED IN VITRO ANGIOGENCESS ASSAY FOR TESTING ANGIOGENCESS INHIBITORS
Barbara Birk, BASF SE (ABSTRACT ID: 318)

• P132 MINING RETINOIC ACID PATHWAY RELATED BIOMARKERS OF VERTEBRATE DEVELOPMENTAL DAMAGE/EYE IRRITATION ASSESSMENT
Laura Samranl, RIVM (ABSTRACT ID: 322)

• P135 OECD APPROVAL IS NOT THE END OF THE STORY – ARE EXISTING TEST METHODS (OECD 442C, D AND E) APPLICABLE TO NANOMATERIALS?
Barbara Birk, BASF SE (ABSTRACT ID: 326)

• P136 SENSITIZATION POTENTIAL OF MEDICAL DEVICES DETECTED BY METHODS IN VITRO AND IN VIVO
Lada Svobodova, National Institute of Public Health (ABSTRACT ID: 328)

• P140 THE CARCINOGENESIS ASSAY FOR POTENCY-ASSOCIATED SUBCLASSIFICATION OF CHEMICALS – RATIONALE, METHOD DEVELOPMENT AND RING TRIAL RESULTS OF PREDICTIVE PERFORMANCE AND REPRODUCIBILITY.
Henrik Johansson, SenzaGen AB (ABSTRACT ID: 334)

• P142 TOXICITY TESTING IN AN IN VITRO MODEL FOR ANTI-CARCINOGENESIS DEMONSTRATES THE IMPROVED PREVENTIVE EFFECTS OF COMBINATIONS OF BIOACTIVE COMPOUNDS AS COMPARED TO SINGLE COMPOUNDS

Simone van Breda, Maastricht University (ABSTRACT ID: 338)

• P146 RELIABLE AND TRULY ANIMAL-FREE SKIN SENSITIZATION TESTING – ADAPTATION OF THE IN VITRO GARDSON ASSAY TO ANIMAL FREE CONDITIONS
Andy Forrerred, SenzaGen AB (ABSTRACT ID: 346)

• P147 HAZARD ASSESSMENT OF PHOTOTOALLERGENS USING GARD™SKIN
Andy Forrerred, SenzaGen AB (ABSTRACT ID: 348)

• P148 PRACTICAL APPLICATION OF IN SILICO APPROACHES IN NEXT GENERATION RISK ASSESSMENT FOR CONSUMER PRODUCTS
Steve Cuttles, Unilever (ABSTRACT ID: 349)

• P149 FRAMEWORK FOR PHYSIOLOGICALLY-BASED KINETICS (PBK) MODELING IN THE NEXT GENERATION RISK ASSESSMENT (NGRA) OF CONSUMER GOODS
Tom Moxon, Unilever (ABSTRACT ID: 352)

• P150 AN IN VITRO MICROFLUIDIC MODEL OF THE HUMAN CARDIOVASCULAR SYSTEM FOR USE IN SCREENING APPLICATIONS – ASSESSMENT OF MONOAMINE-TO-ENDOTHELIAL CELL ADHESION AND CYTOKINE ANALYSIS
Gina Smith, Labcorp Drug Development (ABSTRACT ID: 357)

• P151 NEXT GENERATION RISK ASSESSMENT FOR SKIN ALLERGY 0.1% COUMARIN IN FACE CREAM AB INITIO CASE STUDY
Georgia Reynolds, SEAC, Unilever (ABSTRACT ID: 358)

• P153 DEVELOPMENT OF MECHANISM-BASED HEMATOXICITY CATEGORIES FOR READ-ACROSS ASSESSMENT USING AN INTEGRATED TOXICITY DATABASE OF CHEMICAL SUBSTANCES
Takahisa Yamada, Division of Risk Assessment, Center for Biological Safety Research, National Institute of Health Sciences (ABSTRACT ID: 370)

• P157 SUCCESSFUL IMPLEMENTATION OF U-SENS™ ASSAY FOR SKIN SENSITIZATION TESTING (OECD 442E) IN CHINA
Lizao Chen, L’Oréal Research & Innovation China (ABSTRACT ID: 372)

• P158 A READY-TO-USE INTEGRATED IN VITRO SKIN CORROSION AND IRRITATION TESTING STRATEGY USING EPISKIN™ MODEL IN CHINA
yanfeng liu, L’OREAL (ABSTRACT ID: 374)

• P159 MULTI-CENTER VALIDATION OF EPISKIN™ MICRONUCLEUS ASSAY A 3D APPROACH FOR THE ASSESSMENT OF GENOTOXICITY POTENTIAL
Lizao Chen, L’Oréal Research & Innovation China (ABSTRACT ID: 375)

• P163 DEVELOPMENT OF A 3D SKIN-COMET ASSAY BUILDING UP THE FOUNDATION FOR HIGHER TIER IN VITRO TESTING BATTERY OF GENOTOXICITY
GIN QIN, L’Oréal research & innovation, China (ABSTRACT ID: 380)

• P164 FULL REPLACEMENT OF REGULATORY SKIN SENSITIZATION TESTING WITH VALIDATED IN VITRO TESTS INTEGRATING THE KINETIC PEPTIDE REACTIVITY ASSAY INTO THE TEST BATTERY
Andreas Natsch, Givaudan Schweiz AG (ABSTRACT ID: 382)

• P174 IN VITRO EVALUATION OF GENOTOXICITY AND IRRITATION POTENTIAL OF EYE DROPS CONTAINING AQUEOUS PLANT EXTRACTS
Donal Zikowski, WALA-Heilmittel GmbH (ABSTRACT ID: 395)

• P175 MULTI-CENTRIC STUDY OF SINTEGRA™ HNC TIME-TO-TOXICITY METHOD FOR SERIOUS EYE DAMAGE/EYE IRRITATION ASSESSMENT
Nathalie Alépée, L’Oréal (ABSTRACT ID: 396)

• P181 IDENTIFICATION AND CHARACTERIZATION OF THYROID HORMONE DISRUPTORS IN CHINESE HERBAL MEDICINES USING A 3D HUMAN PRIMARY NEURAL PROGENITOR CELL IN VITRO
Jordis Klose, Leibniz Research Institute for Environmetnal Medicine - JIF Dusseldorf (ABSTRACT ID: 403)

• P184 INVESTIGATION OF NEURODEVELOPMENTAL TOXICITY OF CHINESE HERBAL MEDICINES CONTAINING AQUATE PLANT EXTRACTS
Andreas Natsch, Givaudan Schweiz AG (ABSTRACT ID: 406)

• P191 FRAMEWORK FOR PHYSIOLOGICALLY-BASED KINETICS (PBK) MODELING IN THE NEXT GENERATION RISK ASSESSMENT (NGRA) OF CONSUMER GOODS.
Carole CHARMEAU-GENEVOIS, KREATiS (ABSTRACT ID: 433)

• P201 DEVELOPMENT OF A STATISTICAL PREDICTION MODEL FOR SKIN SENSITIZATION BY NON-ANIMAL APPROACHES
yuichiro Goto, KOSÉ Corporation (ABSTRACT ID: 434)
• P208 A HUMAN IPSC-BASED IN VITRO NEURONAL NETWORK FORMATION ASSAY TO INVESTIGATE NEURODEVELOPMENTAL TOXICITY OF PESTICIDES
  Kristina Bartmann, IUF - Leibniz Research Institute for Environmental Medicine (ABSTRACT ID: 445)

• P215 IN VITRO TESTS OF STONE WOOL FIBRES DISSOLUTION
  Denis Okhrimenko, ROCKWOOL International a/S (ABSTRACT ID: 453)

• P252 RETROSPECTIVE ANALYSIS OF DERMAL TRIPLE PACK DATA
  David Allen, Integrated Laboratory Systems, LLC (ABSTRACT ID: 474)

• P240 IN SILICO AND IN VITRO APPROACHES SUPPORTING TARGET ORGAN SAFETY ASSESSMENT IN PHARMACEUTICAL DRUG DISCOVERY
  Annie Delaunois, UCB Biopharma SRL (ABSTRACT ID: 498)

• P242 READ-ACROSS CAN INCREASE CONFIDENCE IN THE NEXT GENERATION RISK ASSESSMENT FOR SKIN SENSITISATION A CASE STUDY WITH RESIDOCINOL
  Nathalie Alépée, L’Oreal (ABSTRACT ID: 500)

• P243 BEYOND ANIMAL TESTING FOR SKIN SENSITIZATION OF COSMETIC INGREDIENTS A CASE STUDY WITH PROPIOL PARABEN
  Nathalie Alépée, L’Oreal (ABSTRACT ID: 502)

• P245 BISPHENOL A, BISPHENOL F AND BISPHENOL S THE BAD AND THE UGLY WHERE IS THE GOOD?
  Sophie Fouyet, UMR CNRS 8038, Laboratoire de Chimie-Toxicologie Analytique et Cellulaire, Faculté de Pharmacie de Paris, Université de Paris, 75006 Paris, France (ABSTRACT ID: 509)

• P262 TOWARDS THE DEVELOPMENT OF ANIMAL PRODUCT-FREE IN VITRO SYSTEMS FOR NGRA OF CONSUMER GOODS
  Sarah Hatherell, Unilever (ABSTRACT ID: 538)

• P256 APPLICATION OF HUMAN INDUCED PLURIPOTENT STEM CELL CARDIOMYOCYTES (hPSC-CM) IN PRECLINICAL IN VITRO CARDIOTOXICITY ASSESSMENT CHALLENGES AND OPPORTUNITIES
  Vitalina Gryshkova, UCB Biopharma (ABSTRACT ID: 554)

• P275 DEFINING THE REPRODUCIBILITY AND APPLICABILITY DOMAIN OF DETOX QUICKPREDICT, A HUMAN PLURIPOTENT STEM CELL-BASED DEVELOPMENTAL TOXICITY ASSAY
  Jessica Palmer, Stemina Biomarker Discovery, Inc. (ABSTRACT ID: 555)

• P277 A TARGETED METABOLOMICS-BASED ASSAY USING HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES IDENTIFIES STRUCTURAL AND FUNCTIONAL CARDIOTOXICITY POTENTIAL
  Jessica Palmer, Stemina Biomarker Discovery, Inc. (ABSTRACT ID: 557)

• P280 THE EXTENT TO WHICH IN VITRO DISTRIBUTION KINETICS DETERMINES DIFFERENCES IN INTRINSIC HEPATIC CLEARANCE BETWEEN ASSAY SETUPS
  Susana Proença, (ABSTRACT ID: 560)

• P281 INTEGRATED STRATEGY FOR EYE IRRIATATION ASSESSMENT OF AGROCHEMICAL FORMULATIONS
  Maria Laura Gutierrez, CONICET - UBA (ABSTRACT ID: 563)

• P295 CRIESPER-CAS9 GENE EDITING IN CULTURED FISH CELLS – TOWARD A NEW ERA OF MECHANISTIC TOXICOLOGY
  Marina Zoppo, Eawag (ABSTRACT ID: 565)

• P298 APPLICATION OF IN SILICO TOOLS DEVELOPED WITHIN LIFE-VERMEER FOOD CONTACT MATERIALS AS CASE STUDY
  Birgitt Metens, Sciensano (ABSTRACT ID: 566)

• P290 IDENTIFYING PUTATIVE MODE-OF-ACTIONS FOR ENVIRONMENTAL CHEMICALS USING HIGH-THROUGHPUT PHENOTYPIC PROFILING
  Johanna Nuyfener, OISIE granted at US Environmental Protection Agency (ABSTRACT ID: 567)

• P328 INTERNATIONAL APPROACHES TO IMPLEMENTING ALTERNATIVE TEST METHODS FOR MARINE BIOTOXINS IN SHELLFISH
  Katherine Groff, PETA Science Consortium International e.V. (ABSTRACT ID: 571)

• P390 THE CHANGING FACE OF CHEMICALS LEGISLATION IN INDIA OPPORTUNITIES TO MINIMIZE TESTING ON ANIMALS
  Anikta Pandey, People for the Ethical Treatment of Animals (PETA) India (ABSTRACT ID: 574)

• P310 EVALUATION OF ANTI-EGFR INDUCED ON- AND TARGET-MEDIATED ADVERSE EFFECTS IN A MICROFLUIDIC 3D HUMAN CO-CULTURE MODEL
  Juliane Hubner, Technische Universität Berlin (ABSTRACT ID: 615)

• P315 ENDOCRINE DISRUPTORS – HARMONISING WITH JUST 1R (REPLACEMENT) IN MIND
  Emma Grange, Cruelty Free International (ABSTRACT ID: 621)

• P316 KEEP IT SIMPLE, SAVE YOUR MONEY AND STICK TO THE PRECLINICAL IN VITRO TOOLS FOR PULMONARY DRUG DEVELOPMENT
  Marius Hittinger, PharmBioTec GmbH (ABSTRACT ID: 626)

• P342 CHARACTERIZATION OF CHEMICAL SUBSTANCES USING CYTOCHROME P450 INHIBITION DATA
  Kouichi Yoshinari, University of Shizuoka (ABSTRACT ID: 674)

• P356 GUIDANCE ON DOSE-SETTING IN REPEATED-DOSE TOXICITY STUDIES: OUTCOME OF AN ECETOC TASK FORCE
  Marco Corvaro, Corteva Agriscience (ABSTRACT ID: 747)

• P366 DEVELOPMENT OF AN ‘AGITATED’ IN VITRO TEST FOR GLASS FIBRE DISSOLUTION
  Elodie Chaudan, Saint-Gobain Research Paris (ABSTRACT ID: 757)

• P378 USING A BONE MARROW MICROPHYSIOLOGICAL SYSTEM TO INFORM ONCOLOGY DRUG-COMBINATION SCHEDULING
  Benedicte Reclin, AstraZeneca (ABSTRACT ID: 758)

• P393 TARGETTRI SAFETY ASSESSMENT AND DE-RISKING OF NOVEL DRUG TARGETS
  Simon Folkertma, TNO (ABSTRACT ID: 772)

• P397 MACHINE LEARNING BASED META-ANALYSES USING MULTIPLE TOXICOGENOMICS DATASETS DOES NOT IMPROVE GENOTOXICITY PREDICTION
  Danyel Jennen, Department of Toxigenomics, Maastricht University (ABSTRACT ID: 776)

• P405 HUMAN IPSC-DERIVED PROXIMAL TUBULAR CELLS-BASED TRANSCRIPTOMICS DATA TO EVALUATE CADMIUM EXPOSURE AT A HIGH TEMPORAL RESOLUTION
  Pranika Singh, Edelweiss Connect GmbH and University of Basel (ABSTRACT ID: 793)

• P413 IN VITRO CELL TRANSFORMATION BIOMARKERS AS CRITERIA FOR EVALUATING POTENTIAL CARCINOGENS
  Maryna Anisovich, Republican unitary enterprise «Scientific practical centre of hygiene» (ABSTRACT ID: 801)

• P417 TRICHLOROETHYLENE GLUTATHIONE CONJUGATES BIOTRANSFORMATION KINETICS AND IMPACT ON OXYGEN CONSUMPTION RATES (OCR) IN HUMAN RENAL PROXIMAL TUBULAR CELLS (RPTEC/TERT1)
  Liliana Capinha, Vrije Universiteit Amsterdam (ABSTRACT ID: 803)

• P438 COSMETIC EUROPE’S LONG RANGE SCIENCE STRATEGY NON-ANIMAL SAFETY ASSESSMENT CASE STUDY OF PHENOXYETHANOL IN COSMETICS
  Matthias Dient, Unilever Safety and Environmental Assurance Centre (ABSTRACT ID: 874)

• P439 THE RTG-WE CELL LINE ASSAY TO PREDICT FISH ACUTE TOXICITY OF WATER SAMPLES AND CHEMICAL COMBINATIONS (ISO 21229/2019)
  Melaine Fischer, Eawag (ABSTRACT ID: 875)

• P441 HPLACENTOX NEW METHOD FOR ENDOCRINE DISRUPTORS ASSESSMENT USING A HUMAN PLACENTAL MODEL
  Elodie Olivier, Université de Paris (ABSTRACT ID: 878)

• P451 TOWARDS AN ADME-COMPETENT 4-ORGAN-CHIP
  Benen Alac Waegge, TissUse GmbH (ABSTRACT ID: 923)

• P453 QUANTITATIVE SENSITIZING POTENCY ASSESSMENT USING GARD™SKIN DOSE-RESPONSE HUMAN IN VITRO DISTRIBUTION KINETICS DATA TO EVALUATE CADMIUM EXPOSURE AT A HIGH TEMPORAL RESOLUTION
  Pranika Singh, Edelweiss Connect GmbH and University of Basel (ABSTRACT ID: 793)

• P454 ASSESSMENT OF SKIN SENSITIZATION POTENTIAL OF FRAGRANCE INGREDIENTS USING THE HET-CAM AND THE RECONSTRUCTED VAGINAL TISSUE MODEL FOR SAFETY TEST OF FEMININE WASH
  Minseok Choi, AMOREPACIFIC (ABSTRACT ID: 986)
P495 IDENTIFICATION OF SKIN SENSITIZING IMPURITIES IN REACTION MIXTURES BY FLUORESCENT NITROBENZOXADIAZOLE-LABELED GLUTATHIONE
Gaku Yamamoto, Sumitomo Chemical Co., Ltd. (ABSTRACT ID: 987)

P494 ASSESSING EXPERIMENTAL UNCERTAINTY IN DEFINED APPROACHES FOR SKIN SENSITIZATION
Susanne Kolle, BASF SE (ABSTRACT ID: 999)

P496 CYTOTOXICITY EVALUATION OF TETRABROMOBISPHENOL A AND POLYSTYRENE NANOPLASTICS ON RTGILL-W1 FISH CELLS
Inês Tejeda, Biology Department (Cell Biology). Faculty of Sciences, Universidad Autonoma de Madrid, Madrid, Spain (ABSTRACT ID: 990)

P502 QUALITY CONTROL OF HEPATIC STEM CELLS DERIVED FROM HUMAN FETAL HEPATOCYTES USING NOVEL, NANOPARTICLES
Riko Jirno, Sojo University (ABSTRACT ID: 997)

P504 U-SENS™ APC CAN BE USED AS AN ALTERNATIVE IN CASE OF STRONG CHEMICAL-INDUCED AUTOFLUORESCENCE AT THE FITC-SPECIFIC WAVELENGTHS
Nathalie Alépée, L'Oreal (ABSTRACT ID: 999)

P505 DEVELOPING A DEFINED APPROACH FOR EYE IRRITATION TESTING
Neepa Choksi, Integrated Laboratory Systems, LLC (ABSTRACT ID: 1001)

P507 THYROID CYSTICATION RESCUE OF COXIDE ON A ZEBRAFISH VERTEBRATE MODEL
Maria Jose Mazón, Biobide (ABSTRACT ID: 1003)

P509 VARIABILITY IN THE RABBIT SKIN IRRITATION ASSAY
John Rooney, Integrated Laboratory Systems, LLC (ABSTRACT ID: 1005)

P512 TOXICITY OF THE AEROSOL-INGREDIENT ALUMINIUM CHLOROHYDRATE (ACH) IN AN IN VITRO MODEL OF HUMAN ALVEOLAR CELLS
Daniela Leme, Federal University of Paraná (UFPR) (ABSTRACT ID: 1009)

P514 INTEGRATED APPROACH TO EVALUATE SKIN PERMEATION AND SKIN SENSITIZATION OF BACCHARIS TRIMERA (LESS.) DC ASTERACEAE
Gabriella Lisboa dos Santos, Federal University of São Paulo (ABSTRACT ID: 1011)

P515 DOSE-DEPENDENT CITOTOXICITY OF BISMUTH NANOPARTICLES PRODUCED BY LASIS IN A REFERENCE MAMMALIAN CELL LINE BALB/C 3T3 AND HUMAN MISENCHYMAL STEM CELLS
Alessandra de Aquar, Carlos Chagas Institute (FIOCRUZ/PR) (ABSTRACT ID: 1013)

P523 EVALUATION OF CELLULAR DAMAGE USING IN VITRO INTESTINAL MODELS AFTER EXPOSURE TO TETRABROMOBISPHENOL A AND POLYSTYRENE NANOPLASTICS
Patricia Soto Bielicka, Autonomous University of Madrid (ABSTRACT ID: 1024)

P538 IMPLEMENTATION OF A DEFINED PLATFORM TO ASSESS DEVELOPMENTAL AND REPRODUCTIVE TOXICITY (DART)
Marjolein Wildwater, Vivaliti (ABSTRACT ID: 1006)

P551 APPLICATION OF DEFINED APPROACHES FOR SKIN SENSITIZATION TO AGROCHEMICAL PRODUCTS
Judy Strickland, Integrated Laboratory Systems, LLC (ABSTRACT ID: 1007)

P552 TOXICITY OF THE AEROSOL-INGREDIENT ALUMINIUM CHLOROHYDRATE (ACH) IN AN IN VITRO MODEL OF HUMAN ALVEOLAR CELLS
Daniela Leme, Federal University of Paraná (UFPR) (ABSTRACT ID: 1009)

P558 INVESTIGATION OF SKIN SENSITIZING IMPURITIES IN REACTION MIXTURES BY FLUORESCENT NITROBENZOXADIAZOLE-LABELED GLUTATHIONE
Gaku Yamamoto, Sumitomo Chemical Co., Ltd. (ABSTRACT ID: 987)

P559 ASSESSING EXPERIMENTAL UNCERTAINTY IN DEFINED APPROACHES FOR SKIN SENSITIZATION
Susanne Kolle, BASF SE (ABSTRACT ID: 999)

P567 AN INVERTED IN VITRO TRIPLE CULTURE MODEL OF THE HEALTHY AND INFLAMED INTESTINE ADVERSE EFFECTS OF POLYETHYLENE PARTICLES
Mathias Busch, IUF - Leibniz Research Institute for Environmental Medicine (ABSTRACT ID: 1079)

P569 GAP ANALYSIS OF EFFECT-DIRECTED MONITORING TOOLS FOR RISK ASSESSMENT OF DRINKING WATER
Valentin De Guessen, Utrecht University (ABSTRACT ID: 1081)

P577 HIGH-THROUGHPUT SCREENING TO PREDICT HERG INHIBITION
Shaun Krishna, NTP, NIEHS (ABSTRACT ID: 1096)

P586 RECONSTRUCTED HUMAN EPIDERMIS TO PREPARE FOR ANIMAL TEST BAN FOR COSMETICS
Liseth Diaz, Belcorp (ABSTRACT ID: 1112)
POSTERS
Theme 2: Innovative technologies

- P1 LINKING UBIQUITINATION NETWORKS TO THE CARBOHYDRATE SUBSTANCE DATABASE TO SUPPORT STUDIES ACROSS SUBSTANCE ENDPOINT DATA AND CATEGORY FORMULATION
- P4 AN IN VIVO SCREENING DEVICE PLATFORM TO REDUCE ANIMAL EXPERIMENTS
- P81 SYSTEMATIC REVIEWS TO REPLACE SPECIFIC ANIMAL EXPERIMENTS FOR ANSWERING BIOLOGICAL QUESTIONS
- P36 INSIGHTS ON P-GLYCOPEPTIDE LIGAND INTERACTIONS FROM MOLECULAR DYNAMICS SIMULATIONS
- P27 FREE CULTURE MEDIUM
- P127 REABSORPTION MODELS
- P136 TISSUE EXPLANTS IN THE INTESTINE EXPLANT BARRIER CHIP
- P139 POST-EXPOSURE POPULATION EFFECT ON DRUG METABOLISM AND ABSORPTION USING EX VIVO INTESTINAL SIMULATIONS
- P63 USE OF TRANSCRIPTOMICS TO SUBSTANTIATE SIMILAR BIOLOGICAL ACTIVITY IN A READ ACROSS PROTOCOL
- P47 CHEMICALLY DEFINED FORMATION OF SPHEROIDS LOADED WITH SUPERPARAMAGNETIC IRON OXIDE NANOPARTICLES
- P40 THREE-STAGE APPROACH FOR EVALUATION OF A CHEMICALLY DEFINED CELL CULTURE MEDIUM FOR THE CACO-2 CELL LINE SHORT-TERM EFFECTS, DIFFERENTIATION POTENTIAL AND LONG-TERM CULTIVATION
- P4 A PRECISELY ADJUSTABLE, LIVE ANIMAL FREE OCULAR CORROSION MODEL
- P26 A PRECISELY ADJUSTABLE, LIVE ANIMAL FREE OCULAR CORROSION MODEL
- P26 A PRECISELY ADJUSTABLE, LIVE ANIMAL FREE OCULAR CORROSION MODEL
- P27 THE VALIDATION OF A SEMI-HIGH THROUGHPUT AUTOMATED OCULAR CORROSION TEST
- P36 INSIGHTS ON P-GLYCOPEPTIDE LIGAND INTERACTIONS FROM MOLECULAR DYNAMICS SIMULATIONS
- P31: A NEW RELIABLE IN SILICO SCREEN FOR ENDOCRINE DISRUPTORS, EFFECTIVELY REDUCING ANIMAL EXPERIMENTATION
- P37 PREPARATION OF A HIGHLY DENSE THREE-DIMENSIONAL MODEL OF A HUMAN COLON TUMOR
- P35 OPTIMIZING THE GENERATION OF HUMAN INDUCED NEURAL PROGENITOR CELL (HINPC)-DERIVED FUNCTIONAL NEURONAL NETWORKS FOR USE AS ALTERNATIVE MODELS IN NEUROTOXICITY TESTING
- P191 DIFFERENTIATION OF MOTOR NEURONS FOR IN VITRO POTENCY ESTIMATION OF NEUROTOXICITY TESTING
- P190 SELF-ORGANIZED PIGMENTED AND VASCULARIZED FULL SKIN TISSUE MODEL FOR MELANOMA RESEARCH
- P185 MATURATION OF HUMAN INDUCED NEURAL PROGENITOR CELL (HINPC)-DERIVED FUNCTIONAL NEURONAL NETWORKS FOR USE AS ALTERNATIVE MODELS IN NEUROTOXICITY TESTING
- P180 OPTIMIZING THE GENERATION OF HUMAN INDUCED NEURAL PROGENITOR CELL (HINPC)-DERIVED FUNCTIONAL NEURONAL NETWORKS FOR USE AS ALTERNATIVE MODELS IN NEUROTOXICITY TESTING
- P177 REAL LIFE APPLICATION OF PROPOSED GUIDELINES FOR HIPSC BANKING IN AN ACADEMIC ENVIRONMENT
- P176 CHEMICALLY DEFINED CELL CULTURE MEDIA – A CONTRIBUTION TO ADDRESS THE REPRODUCIBILITY CRISIS IN BIOMEDICAL SCIENCES
- P175 OPTIMIZATION OF GENE SILENCING IN A CELL-LADEN 3D ORGAN-LIKE MODEL BY MEANS OF RNA INTERFERENCE
- P79 RETHINK-NET - DESIGN THINKING WORKSHOPS TOWARDS THE IMPLEMENTATION OF THE 3RS
- P75 THE IMPLEMENTATION OF THE 3RS
- P74 IMPLEMENTATION OF THE 3RS
- P73 IMPLEMENTATION OF THE 3RS
- P72 IMPLEMENTATION OF THE 3RS
- P71 IMPLEMENTATION OF THE 3RS
- P70 IMPLEMENTATION OF THE 3RS
- P69 IMPLEMENTATION OF THE 3RS
- P68 IMPLEMENTATION OF THE 3RS
- P67 IMPLEMENTATION OF THE 3RS
- P66 IMPLEMENTATION OF THE 3RS
- P65 IMPLEMENTATION OF THE 3RS
- P64 IMPLEMENTATION OF THE 3RS
- P63 IMPLEMENTATION OF THE 3RS
- P62 IMPLEMENTATION OF THE 3RS
- P61 IMPLEMENTATION OF THE 3RS
- P60 IMPLEMENTATION OF THE 3RS
- P59 IMPLEMENTATION OF THE 3RS
- P58 IMPLEMENTATION OF THE 3RS
- P57 IMPLEMENTATION OF THE 3RS
- P56 IMPLEMENTATION OF THE 3RS
- P55 IMPLEMENTATION OF THE 3RS
- P54 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P53 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P52 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P51 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P50 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P49 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P48 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P47 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P46 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P45 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P44 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P43 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P42 DEVELOPMENT OF A DIET-INDUCED MODEL FOR NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND FIBROSIS IN A TRIPLE-CELL-TYPE, SPHEROID-BASED LIVER-ON-CHIP MODEL WITH MICROFLUIDICS
- P120 THE CARDIAC EMBRYONIC STEM CELL TEST SHOWS PRESENCE OF BIOMARKERS FOR ENDODERMAL, ECTODERMAL, AND NEURAL DIFFERENTIATION
  Gina Mennin, RVM (ABSTRACT ID: 450)

- P127 AN ALTERNATIVE METHOD TO CULTURE INTESTINAL ORGANOID MODELS WITHOUT LOSS OF BIOLOGICAL FUNCTIONALITY
  Kitty van Summeren, University of Applied Sciences Utrecht (ABSTRACT ID: 468)

- P227 MASS SPECTROMETRY-BASED QUANTIFICATION OF ALL ANTIGENS IN DIPHTHERIA-TETANUS-ACELULIR PERTUSSIS COMBINATION VACCINES CONTAINING ALUMINIUM HYDROXIDE AS ADJUVANT
  Larissa van der Maas, Intravacc (ABSTRACT ID: 476)

- P228 COMBINATORIAL MODEL ORGANISM STRATEGY TO PREdict DEVELOPMENTAL AND REPRODUCTIVE TOXICITY (DART)
  Johanna Louter - van de Haar, University of Applied Sciences Utrecht (ABSTRACT ID: 477)

- P229 ULTRASTRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF A RECONSTRUCTED HUMAN CORNEAL EPITHELIUM (HCE) AS AN ALTERNATIVE TO ANIMAL USE
  Christian Pellkevovis, EPSINK (ABSTRACT ID: 478)

- P320 MIXTURE-BASED QSAR MODELS OF OCULAR TOXICITY FOR REGULATORY HGARD CATEGORIES
  Alexander Sedykh, Sciome, LLC (ABSTRACT ID: 479)

- P396 A NOVEL IN SILICO TOOL FOR DOSE ASSESSMENT IN CELL MONOLAYER NANOTOXICOLOGY
  Jie-Long He, ASIA University (Taiwan), Department of Post-Baccalaureate Veterinary Medicine (ABSTRACT ID: 782)

- P391 A NOVEL IN SILICO FRAMEWORK FOR IN VITRO MODEL OPTIMIZATION THROUGH HPSC DERIVED CARDIAC CELLS
  Hyang-Ae Lee, Korea Institute of Toxicology (ABSTRACT ID: 775)

- P392 THREE-DIMENSIONAL CULTURE IMPROVES THE MORPHOLOGY AND FUNCTION OF TRANSPORTERS IN PRIMARY RAT HEPATOCYTES
  Axel Maruna, U.S. Food and Drug Administration (ABSTRACT ID: 781)

- P395 BETTER THAN MATRIGEL? ALTERNATIVE CELL CULTURE COATINGS FOR ENGINEERED MUCOUS TISSUE MODELS
  Kathrin Piskar, MatTek In Vitro Life Sciences Laboratories (ABSTRACT ID: 783)

- P397 ALTERNATIVE TOXICITY TESTING STRATEGIES TO ADVANCE THE 3RS - A CASE STUDY ON CONSERVED MOLECULAR PATHWAYS
  Bikanka Marigliani, Humane Society International (ABSTRACT ID: 666)

- P398 DRUGS AND MUCUS DECIPHERING THE INTERACTION MECHANISMS USING A BIOSIMILAR MUCUS MODEL
  Cosmin Butnaru, University of Turin (ABSTRACT ID: 653)

- P399 USE OF THE FULL THICKNESS MODEL, T-SKIN™, TO INVESTIGATE THE EFFECTS OF UV A AND UVB ON SKIN AND PHOTOPROTECTIVE EFFECTS OF VITAMIN C
  Damien Leitlèvre, EPSINK (ABSTRACT ID: 701)

- P400 EVALUATION OF THE SINGLE-CELL LEVEL IMMUNO-EFFICACY OF RECOMBINANT PROTEIN DOXORUBICIN, PAMIDRONATE AND CYCLOSPORINE A.
  Ermes Botte, Research Centre “E. Piaggio” - University of Pisa (ABSTRACT ID: 612)

- P401 SUITABILITY AND PERFORMANCE OF BIOCULAR AND EPITOXUS IN VITRO 3D TISSUE MODELS IN CHINA
  Cristi Gomez, Mary Kay Inc. (ABSTRACT ID: 617)

- P402 A NOVEL HUMAN MATERIAL-BASED PLATFORM TECHNOLOGY FOR TISSUE ENGINEERING
  Johannes Hackethal, THT Biomaterials (ABSTRACT ID: 625)

- P403 IN VITRO MODELING OF GASTROINTESTINAL EXPOSURE AND RESPONSE TO ENGINEERED NANOMATERIALS
  Marcel Piskar, MatTek In Vitro Life Sciences Laboratories (ABSTRACT ID: 753)

- P404 A NOVEL SYSTEM OF INFUSION TO PROVIDE DRUGS WITHIN EX VIVO SKIN MODELS
  Johanna Louter - van de Haar, University of Applied Sciences Utrecht (ABSTRACT ID: 792)

- P405 IN VITRO SKIN IRRITATION PROTOCOL FOR THE MEDICAL DEVICES EXTRACTS USING EPIEDERM MODEL
  Jan Markus, MatTek DLVL (ABSTRACT ID: 775)

- P406 BETTER THAN MATRIGEL? ALTERNATIVE CELL CULTURE COATINGS FOR INDUCED MUCUS MODEL
  Thomas Maruna, U.S. Food and Drug Administration (ABSTRACT ID: 811)

- P407 FULLY HUMAN SKIN-ON-A-CHIP WITH A MODULAR ARCHITECTURE AND INTEGRATED ENDOTHELIAL CELLS AS TOOL TO INVESTIGATE METABOLISM AND HEPATOTOXICITY
  Jessica Lelievre, EPISKIN (ABSTRACT ID: 701)

- P408 ALTERNATIVE TOXICITY TESTING STRATEGIES TO ADVANCE THE 3RS - A CASE STUDY ON CONSERVED MOLECULAR PATHWAYS
  Bikanka Marigliani, Humane Society International (ABSTRACT ID: 666)

- P409 IN VITRO MODELING OF GASTROINTESTINAL EXPOSURE AND RESPONSE TO ENGINEERED MUCOUS TISSUE MODELS
  Anatol Ulrich, PRIMACRYT Cell Culture Technology GmbH (ABSTRACT ID: 816)

- P410 SUITABILITY AND PERFORMANCE OF BIOCULAR AND EPITOXUS IN VITRO 3D TISSUE MODELS IN CHINA
  Cristi Gomez, Mary Kay Inc. (ABSTRACT ID: 617)

- P411 THE CARDIAC EMBRYONIC STEM CELL TEST SHOWS PRESENCE OF BIOMARKERS FOR ENDODERMAL, ECTODERMAL, AND NEURAL DIFFERENTIATION
  Gina Mennin, RVM (ABSTRACT ID: 450)

- P412 MIXTURE-BASED QSAR MODELS OF OCULAR TOXICITY FOR REGULATORY HGARD CATEGORIES
  Nathalie Jung, Goethe-University Frankfurt (ABSTRACT ID: 511)

- P413 USE OF THE FULL THICKNESS MODEL, T-SKIN™, TO INVESTIGATE THE EFFECTS OF UV A AND UVB ON SKIN AND PHOTOPROTECTIVE EFFECTS OF VITAMIN C
  Damien Leitlèvre, EPSINK (ABSTRACT ID: 701)

- P414 NEW INSIGHT INTO THE MECHANISMS UNDERLYING 5-FLUOROURACIL-INDUCED INTESTINAL TOXICITY BY ESTABLISHING TRANSCRIPTOMIC RESPONSES IN EXPOSED HUMAN INTESTINAL ORGANOIDS
  Daniela Rodriguez, HML - Maastricht University (ABSTRACT ID: 584)

- P415 AN ALTERNATIVE METHOD TO CULTURE INTESTINAL ORGANOID MODELS WITHOUT LOSS OF BIOLOGICAL FUNCTIONALITY
  Kitty van Summeren, University of Applied Sciences Utrecht (ABSTRACT ID: 468)

- P416 COMBINATORIAL MODEL ORGANISM STRATEGY TO PREdict DEVELOPMENTAL AND REPRODUCTIVE TOXICITY (DART)
  Johanna Louter - van de Haar, University of Applied Sciences Utrecht (ABSTRACT ID: 477)

- P417 MASS SPECTROMETRY-BASED QUANTIFICATION OF ALL ANTIGENS IN DIPHTHERIA-TETANUS-ACELULIR PERTUSSIS COMBINATION VACCINES CONTAINING ALUMINIUM HYDROXIDE AS ADJUVANT
  Larissa van der Maas, Intravacc (ABSTRACT ID: 476)

- P418 ULTRASTRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF A RECONSTRUCTED HUMAN CORNEAL EPITHELIUM (HCE) AS AN ALTERNATIVE TO ANIMAL USE
  Christian Pellkevovis, EPSINK (ABSTRACT ID: 478)

- P419 A NOVEL IN SILICO FRAMEWORK FOR IN VITRO MODEL OPTIMIZATION THROUGH GENERALIZED ALLOMETRIC SCALING
  Ermes Botte, Research Centre “E. Piaggio” - University of Pisa (ABSTRACT ID: 612)
POSTERS
Theme 3: Ethics, Welfare and Regulation

- P6 Successes and Challenges in Networking and Promoting 3Rs Within Italian Universities. The Centro 3R Experience.
  Arri Abruoli, Interuniversity Center for the Promotion of the 3Rs in Teaching and Research (Centro 3R) (ABSTRACT ID: 88)
- P8 Repeating Past Mistakes: The Banality and Futility of Nowadays’ Cigarette Smoke-Related Animal Experimentation.
  Dilyana Filipova, Doctors Against Animal Experiments (ABSTRACT ID: 61)

P10 Systematic Reviews to Replace Animal Experiments for Optimising Experimental Design.
  Cathalijn Leenaars, ZTL-MHH (ABSTRACT ID: 82)

P12 Promoting the Replacement of the 3Rs Principle: Short Courses.
  Marc Trassard, Universitat de Barcelona (ABSTRACT ID: 150)

P23 r-DofA MsCs Data Analysis Framework for Regulatory Application.
  Florian Caiment, Maastricht University (ABSTRACT ID: 120)

P34 Biological Data of Non-Human Primates During the Quarantine Periods.
  Young-Su Yang, Korea Institute of Toxicology (ABSTRACT ID: 146)

P38 Customizing Animal Welfare Legislation for Animals Used in Xenotransplantation Trials and Production in the United States.
  Mimi Lam, University of Edinburgh (ABSTRACT ID: 152)

P42 Novel Home Cage Activity Metrics for Postoperative Care Refinement in a Mouse Surgical Model.
  Fabrizio Scorrano, Novartis International AG (ABSTRACT ID: 159)

P44 The Role of the Animal Welfare Body in Developing a Functional and Efficient Culture of Care.
  Thomas Bertelsen, Novo Nordisk A/S (ABSTRACT ID: 162)

P45 Reduction of Controls in Preclinical Clamp Studies Using a Non-Linear Mixed-Effects Model.
  Thomas Bertelsen, Novo Nordisk A/S (ABSTRACT ID: 165)

P48 Modernizing Biomedical Research and Regulatory Policies to Advance Human Health.
  Emily Trunnell, People for the Ethical Treatment of Animals (ABSTRACT ID: 172)

P50 3Rs Self-Assessment Tools to Support Research Groups and Institutions to Track, Evaluate and Benchmark Their 3Rs Activities.
  Jessica Eddy, NCRs (ABSTRACT ID: 179)

P67 Animal Dissection in Teaching Minors (Under 19 Years of Age) in Korea - Contradictory Korean Legislation and Enforcement Rule.
  Cwi-Hyang Lee, BIC Study (ABSTRACT ID: 201)

P84 Improving Quality of in Vitro Methods a CIVIMP Certification Program.
  Amanda Ulrey, IVS (ABSTRACT ID: 228)

P93 Development of Guidance for IACUC Members in Korea Applying the 3Rs Principles.
  Cwi-Hyang Lee, BIC Study (ABSTRACT ID: 270)

P112 Improving Animal Research Enhancing Systematic Review Methodology.
  Cathalijn Leenaars, ZTL-MHH (ABSTRACT ID: 288)

P117 Smatra Smart Feature Based Interactive Ranking to Retrieve Possible Alternatives from the Literature.
  Daniel Butzke, German Federal Institute for Risk Assessment (BfR) (ABSTRACT ID: 296)

P123 Telemetry as Method to Assess Severity in Sheep.
  Eva Zentrich, Institute for Laboratory Animal Science, Medical School Hannover (ABSTRACT ID: 309)

P137 Identifying Fish - Methods for Tagging and Marking.
  Per E Leung, The Swedish 3Rs Center (ABSTRACT ID: 329)

P138 The Problem of Pain in Animal Experimentation.
  Katherine Roe, PETA (ABSTRACT ID: 330)

P143 The Rodent in the Room Considering Sentence in Research Programs Using Mice and Rats.
  Ingrid Taylor, People for the Ethical Treatment of Animals (ABSTRACT ID: 342)

P153 A Perfect Match Reduces Animal Use.
  Ronald Visblom, HU University of Applied Sciences (ABSTRACT ID: 364)

  yanfeng liu, L’Oreal (ABSTRACT ID: 376)

P165 Defining Physicochemical Exclusion Rules to Identify Chemicals That Do Not Require Classification of Serious Eye Damage/Eye Irritation a Cosmetic Europe Analysis.
  Els Adriams, Adriaens Consulting (ABSTRACT ID: 385)

P187 Foster and Fund Enhancing 3Rs Activities at Charité – Universitätsmedizin Berlin by Charité 3R.
  Ida Retter, Charité - Universitätsmedizin Berlin (ABSTRACT ID: 414)

  Adam Deák, University of Debrecen (ABSTRACT ID: 423)

P195 Multimodal Monitoring in a Preclinical Study Wheel Running Behaviour Uncovered Impaired Welfare Due to Serial Intraperitoneal Injections.
  Eva Zentrich, Institute for Laboratory Animal Science, Medical School Hannover (ABSTRACT ID: 425)

P196 Recommendations on Group Housing of Male Mice - A Compilation of Experiences from Swedish Laboratory Animal Facilities and Scientific Literature.
  Kaisa Askiev, Swedish 3Rs Center (ABSTRACT ID: 427)

P204 Marching Towards Asian Federation for Alternatives to Animal Testing (AFAT) Through Harmonization of Asian 3Rs Centres and Associations for Alternatives.
  Mangala Gunatilake, Faculty of Medicine, University of Colombo, Sri Lanka (ABSTRACT ID: 438)

P216 Do We Really Have The Same Genes? Genetic Differences Between Humans and Lab Mice.
  Dilyana Filipova, Doctors Against Animal Experiments (ABSTRACT ID: 460)

P222 Introducing Brazilian Students to LOIBYING - Enacting Legislation against Cosmetic Testing on Animals.
  Antoniana Ottone, Humane Society International (ABSTRACT ID: 470)

  Agnes Karmaus, Integrated Laboratory Systems, LLC (ABSTRACT ID: 482)

P253 Global Effort to End Animal Testing for Health Claims of Foods and Beverages.
  Frances Cheng, People for the Ethical Treatment of Animals (ABSTRACT ID: 522)

P254 International Harmonization of Non-Animal Methods for Biomedical Training.
  Frances Cheng, People for the Ethical Treatment of Animals (ABSTRACT ID: 526)

P255 Roadmap to Replacement - Addressing Surplus Animal Breeding.
  Lindsay Marshall, Humane Society International (ABSTRACT ID: 527)

P263 Title World Pharmacopeias Are Ready to Adopt Non-Animal in Vitro Replacement Tests for Detection of Pyrogens: Are You? Katrin Pauls, Lonza Bioscience (ABSTRACT ID: 539)

P267 Evaluating Dog Use in Biomedical Research in Order to Identify Non-Animal, Human-Based Replacement Options.
  Lindsay Marshall, The Humane Society of the United States (ABSTRACT ID: 545)

P268 Retrospective Evaluation of the Acute Fish Toxicity Test for Pesticide Registration.
  Patricia Ceger, Integrated Laboratory Systems, LLC (ABSTRACT ID: 546)

P276 Ethical and Scientific Concerns Regarding the Continued Use of Experimentally Induced Brain Injuries in Primates.
  Katherine Roe, PETA (ABSTRACT ID: 556)

P279 3Rs Centre in Laboratory Animal Science in Sri Lanka.
  Mangala Gunatilake, Faculty of Medicine, University of Colombo (ABSTRACT ID: 559)

P297 Refining Behavioral Management Programs for Research FCG.
  Carly O’Malley, Charles River Laboratories (ABSTRACT ID: 587)

P302 Systematic Review on the Reporting of Mouse Models for Bone Healing.
  Angelique Wolter, Charité-Universitätsmedizin Berlin (ABSTRACT ID: 600)
POSTERS
Theme 4: Disease

- P5 PROTECTIVE EFFECT OF MELATONIN ON HYPOXIA-INDUCED CARDIOMYOCYTE DIFFERENTIATION OF MOUSE EMBRYONIC STEM CELLS
  Eui-Bae Jeung, Chungbuk National University (ABSTRACT ID: 33)

- P61 MONITORING INNOVATION AND SOCIETAL IMPACT OF BIOMEDICAL RESEARCH
  Janine McCarthy, Physicians Committee for Responsible Medicine (ABSTRACT ID: 117)

- P62 CORNEAL EDEMA SIMULATION AND THERAPY IN THE EX VIVO EYE IRITATION TEST (EVEIT)
  Claudia Pantl, Aachen Centre of Technology Transfer in Ophthalmology, (ACTO e. V.), Aachen, Germany (ABSTRACT ID: 123)

- P49 CERTAIN HARMs AND UNCERTAIN BENEFITS IN ANIMAL MODELS FOR THE STUDY OF HUMAN DEPRESSION AND ANXIETY
  Emily Trunnell, People for the Ethical Treatment of Animals (ABSTRACT ID: 173)

- P56 3D SPHEROIDS OF CHORIORETINAL ENDOTHELIAL CELLS AS AN ALTERNATIVE-TO-ANIMAL MODEL FOR DIABETIC RETINOPATHY
  Manish Gore, Institute of Chemical Technology (ABSTRACT ID: 190)

- P77 SYSTEMATIC REVIEW PROTOCOL ON THE EFFECT OF FECAL MICROBIOTA TRANSPLANTATION ON BEHAVIOR IN ANIMALS
  Erin Colleen Boyle, Hannover Medical School (ABSTRACT ID: 218)

- P92 SEARCH FOR CANDIDATE MIARNAS IMPlicated IN PUTATIVE ADVERSE OUTCOME PATHWAY (AOP) RELEVANT TO ALZHEIMER’S DISEASE
  Maria Tsamou, TxoGenSolutions BV (ABSTRACT ID: 225)

- P508: GALLERIA MELLONELLA MODEL HOST: A POTENTIAL IN VIVO TOOL TO ASSESS ANTIBODY FUNCTIONALITY
  Emiliano Chiarot, GSK (ABSTRACT ID: 278)

- P109 APOPTOSIS AND AUTOPHAGY CAN BE REDUCED WITH AN INOS-INHIBITOR IN AN OXIDATIVE STRESS RETINA ORGAN CULTURE MODEL
  Sven Schnichels, University Eye Hospital Tuebingen (ABSTRACT ID: 305)

- P108: GALLERIA MELLONELLA MODEL HOST: A POTENTIAL IN VIVO TOOL TO ASSESS ANTIBODY FUNCTIONALITY
  Emiliano Chiarot, GSK (ABSTRACT ID: 278)

- P172 ZEBRAFISH EMBRYO MODEL FOR CHEMICAL-INDUCED CLEFT PALATE
  Junichi Tasaki, Kao Corporation (ABSTRACT ID: 646)

- P107: RABIES 2+1 SEQUENTIAL TESTING TO REDUCE 40% OF THE USE OF ANIMALS
  Roman Adamczyk, GSK (ABSTRACT ID: 491)

- P238: THE SINGLE-DUPLICATION AS VIRAL VACCINE POTENCY TESTING TO REDUCE 70% OF THE USE OF ANIMALS
  Roman Adamczyk, GSK (ABSTRACT ID: 491)

- P247 HUMAN IN VITRO MODELS TO STUDY BONE METASTASES
  Marijolein van Driel, Erasmus MC (ABSTRACT ID: 515)

- P565 CONFIRMATORY PRECLINICAL STUDIES AS MEANS TO GUIDE DECISIONS TO ENGAGE IN CLINICAL TRIALS THE DECIDE PROJECT
  Natascha Drude, Charité Universitätsmedizin Berlin - Berlin Institute of Health QUEST Center for transforming biomedical research (ABSTRACT ID: 541)

- P512 DEVELOPMENT OF AN EX-VIVO RETINAL DYSTrophy MODEL BY LIGHT INDUCED NEURODEGENERATION
  Anna-Catharina Krebs, TissUse GmbH, TU Berlin (ABSTRACT ID: 335)

- P379 DEVELOPMENT OF FUNCTIONAL 3D CARDIOVASCULAR CONSTRUCT
  Hanna Vuorenpää, Tampere University, Finland (ABSTRACT ID: 749)

- P532: PRECISION-CUT LUNG SLICES AND REFINED CLINICAL READOUTS IN HAMSTER MODEL FOR DIABETIC RETINOPATHY
  Hanna Vuorenpää, Tampere University, Finland (ABSTRACT ID: 749)

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L’Oréal has devoted itself to beauty for over 100 years. With its unique international portfolio of diverse and complementary brands, the Group generated sales amounting to 26.9 billion euros in 2018 and employs 82,000 people worldwide.

Research & Innovation, and a dedicated research team of 3,993 people, are at the core of L’Oréal’s strategy, working to meet beauty aspirations all over the world. L’Oréal’s sustainability commitment for 2020 “Sharing Beauty With All” sets out ambitious sustainable development objectives across the Group’s value chain.

Consumer health and safety is and has always been an absolute priority of the L’Oréal Group. Defending animals’ welfare as well. To achieve these two objectives, L’Oréal conducts a very strict safety evaluation policy for its products. Starting by the development of the first models of reconstructed skins in 2019, L’Oréal has been a pioneer in the development and use of new alternative in vitro and in silico methods.

Thanks to this long term investment and conviction, L’Oréal stopped testing its products on animals in 1989, 14 years before required to do so by law. L’Oréal no longer tests its ingredients on animals neither tolerates any exceptions to this rule.

L’Oréal’s commitment to ending animal testing is supported by the provision of reconstructed skin models thanks to 3 production Units through its subsidiary EPISKIN SA (based in France, China, Brazil), the development and validation of new alternative methods and the sharing of its scientific advances.

In 2017, the OECD adopted two new alternatives methods developed by the L’Oréal Research Laboratories, to evaluate skin allergy and eye irritation. Today, L’Oréal is committed to develop next generation of new safety assessment approaches alternative to animal testing to ensure product safety for consumers and environment and support innovation.

Our brands are trusted everyday in millions of living rooms, kitchens, laundry rooms, and bathrooms – and have been family favorites from generation to generation for over 180 years. We know that to continue to be the brands people choose, we must continue to innovate high quality and safe ingredients. We also recognize that we must continue to evolve our approach to demonstrating safety.

We are committed to making animal testing obsolete. For more than 40 years, P&G has engaged in non-animal approaches and solutions. We have sponsored and contributed to all World Congresses on Animal Alternatives, including the first held in 1993 in Baltimore, Maryland. Over that time, P&G has invested more than $420 million in developing non-animal alternatives, yielding more than 25 alternative test assays invented or co-invented by our experts. Many of these approaches have been accepted as the new standard in non-animal safety assessment used by academia, industry or regulatory authorities around the world. Some of them, like the Direct Peptide Reactivity Assay (DPRA), have been recognized with prestigious awards by animal welfare groups.

Yet there is more to be done. Therefore, we are a proud sponsor of #BeCrueltyFree, calling for an end to all animal testing of cosmetic products globally.

And we are pleased to sponsor the 11th World Congress to enable the sharing and reapplication of the latest progress in non-animal alternatives. Let’s work together, because only together can we make our shared goal a reality: Making animal testing obsolete.
UNILEVER

On any given day, 2.5 billion people use Unilever products. Our range of more than 400 brands gives us a unique place in the lives of people all over the world. Seven out of every ten households around the world contain at least one Unilever product, and our range of world-leading, household-name brands includes Dove, Knorr, Axe, Hellmann’s and Omo. Unilever’s purpose and business strategy are to make sustainable living commonplace.

We use a wide range of non-animal approaches to assess the safety of our products for consumers. We are committed to ending animal testing. Our leading-edge research has one clear purpose: to continue to develop new non-animal approaches that can guarantee that our products are safe, without any need for animal testing. As part of our commitment to ending animal testing, we have a growing number of brands that ensure that neither their products – nor the ingredients they use – are subject to animal testing by suppliers or by regulatory authorities. These brands’ commitment to no animal testing is certified by animal welfare groups.

Our commitment to ending animal testing is underpinned by our work since the 1980s in developing and using alternatives to animal tests for assessing safety, e.g. computer-based modelling and cell-based ‘in vitro’ methods. Unilever’s framework for safety assessment is risk-based rather than hazard-based. This enables us to use a wide range of non-animal approaches to assess the safety of our products for consumers. We are making good progress in developing next generation (non-animal) risk assessment approaches for assessing new ingredients and share our scientific research on a dedicated Safety Science in the 21st Century website.

HUMANE SOCIETY INTERNATIONAL

Humane Society International works to create a kinder, more humane world for all animals through science, education, advocacy and policy change. Our Research & Toxicology team includes scientists, regulatory and government affairs professionals who are active on the ground in the world’s leading innovation economies. We work with industry and lawmakers to enact legislation that reduces reliance on animal testing in favor of best scientific practice and to implement bans on animal testing of cosmetics (hsi.org/becrueltyfree). We work with regulatory authorities and stakeholders to accelerate regulatory acceptance of animal-free safety assessment practices across multiple industry sectors (animalfreesafety.org). Our team also leads the BioMed21 Collaboration (biomed21.org) to move medical research to embrace 21st century science.
Established in 1993, ARDF promotes alternatives to the use of animals in biomedical research, testing and education. The foundation has awarded over $3.5M through its Annual Open Research Grant program. It also sponsors scientific meetings and presents the Cave Award for outstanding achievements in advancing alternative methods. ARDF recently launched the Alternatives in Research Challenge, a program to focus science funding and prize money exclusively in the area of alternative methods for biomedical research.

Beiersdorf

Beiersdorf is a leading provider of innovative, high-quality skin care products and has over 135 years of experience in this market segment. The Hamburg-based company has about 20,000 employees worldwide and is listed on the DAX, the German benchmark equities index. Beiersdorf generated sales of €7.2 billion in financial year 2018. Its product portfolio comprises strong, international leading skin and body care brands including NIVEA, Eucerin, Hansaplast/Elastoplast, and La Prairie.

EPAA

The European Partnership for Alternative Approaches to Animal Testing (EPAA) is an unprecedented voluntary collaboration between the European Commission, European trade associations, and companies from 7 industry sectors. The partners are committed to pooling knowledge and resources to accelerate the development, validation and acceptance of alternative approaches to animal use in regulatory testing. The overall aim is the replacement, reduction and refinement (3Rs) of animal use in regulatory testing.

IFRA

The International Fragrance Association (IFRA) is the representative body of the fragrance industry worldwide. Comprised of eight multinational companies, hundreds of small and medium-sized companies in 21 National Associations, and eight supporting members, IFRA’s membership covers about 90% of the industry by production volume. We seek to promote the safe use of fragrance for everyone’s enjoyment, working with regulators and promoting our flagship self-regulatory program, the IFRA Code of Practice and the IFRA Standards.

THE HUMANE SOCIETY OF THE UNITED STATES

The Humane Society of the United States is working tirelessly to decrease and eventually end the use of animals for harmful research and testing. We work toward this goal by focusing on key areas such as eliminating cosmetics testing on animals through our Be Cruelty Free campaign, ending the use of dogs for testing, expanding the development and use of non-animal methods, and ensuring retirement of chimpanzees from laboratories to sanctuaries as soon as possible.