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Welcome

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WC12
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Regulatory Acceptance & Next-Gen Education
August 27-31, 2023 | Niagara Falls, Canada
#3RsOverTheEdge

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**Regulatory Acceptance
and Global Harmonization**

Next-Gen Education

**Ethics, Welfare, Policies,
and Regulations**

**Human-Centered
Biomedical Research**

**Refinement and Impact
on Science**

**21st Century Predictive
Toxicology**



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Accelerating the transition to animal-free safety assessment: What can we learn from the cosmetics animal testing bans?

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Animal-free safety science has advanced a great deal in the twenty first century. Investment in New Approach Methodologies (NAMs) and Next Generation Risk Assessment (NGRA) approaches have enabled significant progress in replacing regulatory animal tests and a global paradigm shift in chemical regulatory testing is now well underway, catalysed by a succession of cosmetic product and ingredient animal testing bans.

We have collectively learnt that combining NAM data with exposure information using computational approaches enables us to set, and assess against, more meaningful human and environmental protection goals. Consequently, it has become clear that transitioning to animal-free NAMs and NGRA approaches can help us better protect people and our planet, support sustainable chemical innovation, and replace animal testing.

So where are we today? After two decades of rapid progress, we find ourselves at a tipping point as we collectively transition from early adoption to widespread use of NAMs and NGRA for chemical safety assessment. This talk will review what we have learnt from widespread Cosmetics Industry adoption of animal-free safety science, discuss the current global state-of-the-science for use of NAMs and NGRA approaches for Chemical Safety Assessment, and share a perspective on how we can accelerate the transition through a renewed focus on education and training.

Presentation: Oral

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Advancing Three Rs uptake in university education through a European network

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The new advanced methodologies in Three Rs Education in Universities, require a mandatory integrated teaching strategy, with a multistep vision, from bachelor to master's degree to PhD, coordi-

nated by a European network. A sort of a dynamic bottom-up approach, re-enforcing during the curricula the knowledge on NAMs and Replacement, through a harmonized European perspective, to find a new common and coherent direction to implement courses in academia to form future European aware experts not only in science, but in all the activities intertwined to the 3Rs, like communication, ethics, innovation, policy, regulation and others.

A first basic and unique 3R course will have to be expected in the first year of all university curricula both related to Life Sciences (LS) and Human/Social Sciences (HSS), followed by a second dedicated course at the third year of LS curricula, i.e. Animal Science, Biology, Biotechnology, Chemistry, Environmental Sciences, Medicine, Physics, Veterinary Medicine etc. and HSS curricula i.e. Economy, Law, Philosophy, Political Sciences etc. Two specific master's degree on 3Rs (2 years) could be hypothesized for scientific career in LS, and another one in humanities. PhD courses will have to include a didactic activity of minimum 4 to 20 hours per year on 3Rs, in relation to the discipline. The harmonizing role of the European network on Three Rs Education in university between the different national realities, will work respecting and emphasizing the aspect of multidisciplinary, interdisciplinarity and intersectionality.

Presentation: Oral

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Enhanced caging standards for rats: Effects on welfare and historical data

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Recently published guidelines from the Canadian Council on Animal Care (CCAC) mandate that laboratory rats be housed in cages that allow them to stand upright and perform vertical stretches; behaviours that are restricted by the height of currently used standard cages. Taller cages may improve rat welfare but could influence historical scientific data and impose operational constraints on staff. To assess the effects of taller cages, forty-eight Sprague-Dawley rats (24 female and 24 male) were housed for 3 months in either standard (20 cm tall) or taller cages (32 cm tall); taller cages also contained a loft. There were no differences in anhedonia ($F_{1,12} = 0.06$, $p = 0.81$), weight gain ($F_{1,12} = 0.42$, $p = 0.53$) or glucose levels ($F_{1,12} = 0.89$, $p = 0.37$); female rats in taller cages showed higher red blood cell counts than female rats in standard cages ($p < 0.05$). The time it took staff to weigh animals and perform cage changes was similar between cage types. Staff found the taller cages to be heavier and more difficult to handle than the standard cages, but most were pleased with the perceived beneficial effect of the taller cages on rat welfare. Our results indicate that the transition to a taller cage that meets the CCAC guidelines is fea-