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## Advancing the Science for Drinking Water Chemical Exposure Assessment and Health Research

15-16 September, 2022  
ISGlobal (Ramon y Cajal room) and Virtual  
Barcelona, Spain

### Meeting Organizers

Cristina Villanueva, PhD, ISGlobal, Barcelona, Spain  
Nicole C. Deziel, PhD, MHS, Yale School of Public Health, Connecticut, USA

**Statement of Goals:** This workshop aims to catalyze discussion of critical issues in assessing exposures to chemical contaminants in drinking water for epidemiology. This workshop will discuss the existing challenges and opportunities in conducting human exposure and epidemiologic research for both regulated and emerging water contaminants and we will explore the latest tools, methods, and data available. This workshop brings together experts from different disciplines to identify new strategies and recommendations for future research efforts. We will consider policy implications and issues around inequities regarding disproportionate exposures and disproportionate data availability and consider these issues within the context of a changing climate.

All times in Central European Standard Time; \*V: indicates speaker presenting virtually

### Day 1: September 15, 2022 1:00 – 6:30 pm

1:00 - 1:15 pm	<b>Arrival and Check-in.</b>
1:15 - 1:25 pm	<b>Welcome and Opening Remarks</b> (10 min). Cristina Villanueva and Nicole Deziel
1:25 - 2:25 pm	<b>The Importance and Challenge of Addressing Drinking Water Exposures and Public Health.</b> Chair: Nicole Deziel
1:25-1:50	<i>Keynote Presentation: Water Research in the 21<sup>st</sup> Century.</i> Manolis Kogevinas (ISGlobal, Barcelona, Spain) (20 min + 5 min Q&A)
1:50-2:15	<i>Keynote Presentation: Challenges of Evaluating Drinking Water Quality in Agricultural Areas</i> Mary Ward (National Cancer Institute, Maryland, USA) (20 min + 5 min Q&A)
2:15-2:25	Discussion (10 min)
2:25 - 3:30 pm	<b>State of the Science on Regulated (and Partially Regulated) Contaminants I.</b> Chair: Cristina Villanueva
2:25-2:30	Overview (5 min)
2:30-2:50	<b>Nitrate in Drinking Water and Risk of Cancer in Adults.</b> Rena Jones (National Cancer Institute, Maryland, USA) (15 + 5 min Q&A) *V

2:50-3:10	<b>Nitrate in Drinking Water and the Risk of Adverse Birth Outcomes and Childhood Cancer.</b> Leslie Stayner (University of Illinois at Chicago, School of Public Health, USA) (15 + 5 min Q&A)
3:10-3:30	<b>Per- and Polyfluoroalkyl Substances (PFAS).</b> Jane Hoppin (North Carolina State University (15 min + 5 min Q&A) *V
3:30– 3:45 pm	Break (15 min)
3:45 – 5:00 pm	<b>State of the Science on Regulated Contaminants II. Disinfection Byproducts and Mixtures.</b> Chair: Cristina Villanueva
3:45-4:05	<b>Hunting for Aquatic Bladder Carcinogens.</b> Tom Bond (Department of Civil and Environmental Engineering, University of Surrey, UK) (15 + 5 min Q&A) *V
4:05-4:25	<b>Disinfection Byproduct Mixture Exposure Metrics in an Epidemiological Study of Birth Defects: Use of Relative Potency Factors.</b> J. Michael Wright-US Environmental Protection Agency Office of Research and Development and Center for Public Health and Environmental Assessment (15 + 5 min Q&A)
4:25-4:45	<b>Register-based Studies on Drinking Water Related Health Effects in Sweden – Current and Future Limitations and Opportunities.</b> Melle Säve-Söderbergh (Swedish Food Agency, Sweden and Karolinska Institutet, Sweden) (15 min + 5 min Q&A) *V
4:45-5:00	Panel Discussion on Regulated Chemicals (15 min)
5:00 – 6:30 pm	<b>Drinking Water Issues in the Context of Planetary Changes and Environmental Justice.</b> Chair: Patrick Levallois (Laval University, Quebec, Canada) *V
5:00-5:05	Overview (5 min)
5:05-5:40	<i>Keynote Presentation: How might future changes in the ways people obtain drinking water affect exposure to chemical contaminants?</i> David Sedlak (University of California, Berkeley, USA) (30 + 5 min Q&A) *V
5:40-6:00	<b>Future Water Availability in Mediterranean Climates.</b> Ivana Cvijanovic, ISGlobal (15 + 5 min Q&A)
6:00-6:20	<b>Environmental Justice and the Human Right to Water in California.</b> Lara Cushing (Fielding School of Public Health, University of California, Los Angeles, USA) (15 + 5 min Q&A) *V
6:20-6:30	Panel Discussion (10 minutes)
6:30 pm	<b>End of Day 1</b>

**Day 2: September 16, 2022**  
**9:30 am – 5:30 pm**

9:30-9:40 am	<b>Review of Day 1 and Introduction to Day 2.</b> Nicole Deziel, Cristina Villanueva
9:40-10:25 am	<b>State of the Science on Emerging Contaminants.</b> Chair: Torben Sigsgaard (Aarhus University, Denmark)
9:40-9:45	Overview (5 min)
9:45-10:05	<b>What is New in Water? Microplastics and Emerging Contaminants.</b> Virissa Lenters (University Medical Center Utrecht, The Netherlands, Netherlands). (15 + 5 min Q&A)
10:05-10:25	<b>Water Impacts from Oil and Gas Drilling.</b> Nicole Deziel, Yale School of Public Health (15 + 5 min Q&A)
10:25-10:55 am	<b>Breakout Groups.</b> Discuss Lessons Learned from Regulated Chemicals; Approaches for Unregulated Chemicals (30 min)
10:55-11:10 am	<b>Report-back from Break Out Groups by Chairs</b> (15 minutes)
11:10 -11:25 am	Break (15 min)
11:25 am -12:25	<b>Assessment of Chemicals in Drinking Water in Low/Middle Income Countries and Environmental Justice Communities.</b> Chair: Manolis Kogevinas
11:25-11:30	Overview (5 min)
11:30-11:50	<b>Drinking Water Quality Assessment in Low and Middle-Income Countries: Example from Nigeria.</b> Adetoun Mustapha (Nigerian Institute of Medical Research) (15 + 5 min Q&A)
11:50-12:10	<b>Drinking Water Quality Assessment in Middle-Income Countries: Example from Malaysia.</b> Sarva Mangala Praveena (Universiti Putra, Malaysia) (15 + 5 min Q&A) <i>V*</i>
12:10-12:25	Panel Discussion (15 min)
12:25 – 1:10 pm	<b>Tools and Technologies for Drinking Water Quality Assessment I.</b> Chair: Jay Nuckols (Colorado State University, USA)
12:25-12:30	Overview (5 min)
12:30-12:50	<b>Bioassays. In Vitro Bioassays for Evaluation of Drinking Water Quality.</b> Beate Escher (UFZ, Germany) (15 min + 5 min Q&A) <i>V*</i>
12:50-1:10	<b>Sewage Epidemiology. Evaluation of the Human Exposure to a Broad Spectrum of Organic Chemicals and the Potential Use of Sewage Sludge to Prioritize Hazardous Substances.</b> Pablo Gago (Institute of Environmental Assessment and Water Research – Severo Ochoa Excellence Center (IDAEA-CSIC), Barcelona) (15 + 5 min Q&A)
1:10 - 2:15 pm	Lunch
2:15-4:55 pm	<b>Tools and Technologies for Drinking Water Quality Assessment II.</b> Chair: Jay Nuckols (Colorado State University, USA)

2:15-2:35	<b>Smartphone Technology. Wearables and Smartphones for the Assessment of Drinking-Related Behaviours.</b> Guillaume Chevance (ISGlobal) (15 min + 5 min Q&A)
2:35-2:55	<b>Passive Samplers. Use of Passive Samplers in Drinking Water Studies.</b> Jörg Schullehner (Department of Public Health, Research Unit for Environment, Work and Health, Aarhus University, Denmark) (15 min + 5 min Q&A)
2:55-3:15	<b>Modeling Approaches</b>
3:15-3:35	<ul style="list-style-type: none"> <li>• <b>Modelling Exposure from Drinking Water Quality Monitoring Programmes.</b> Jörg Schullehner (Department of Public Health, Research Unit for Environment, Work and Health, Aarhus University, Denmark) (15 min + 5 min Q&amp;A)</li> <li>• <b>Scalable Models for Drinking-Water Vulnerability Assessment.</b> James Saiers (Yale School of the Environment, USA) (15 min+ 5 min Q&amp;A) *V</li> </ul>
3:35-4:55	Panel Discussion on Tools & Technologies (20 min)
4:55-5:30 pm	<b>Wrap-up and Final Discussion</b> (35 minutes)