CV Christoph Ort

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1. Personal information

Place of birth: Zurich, CH
Date of birth: 16.8.1974
Nationality: Swiss

scopus ID 57218868688
ResearcherID F-5066-2012
OrcID 0000-0001-9950-2286
Google Scholar

2. Education

2006 **Ph.D. in Environmental Engineering**, *Swiss Federal Inst. of Technology (ETHZ) and Swiss Federal Inst. of Aquatic Science and Technology (Eawag),* Supervisor Prof. Dr Willi Gujer Co-referees Prof. Dr Walter Giger and Prof. Dr Peter Vanrolleghem

1999 **M.Sc. (Dipl. Ing. ETH, Civil and Rural Engineering)** *Swiss Federal Inst. of Technology ETHZ.*

3. Employment history

2016 - present **Group Leader** *Urban Water Management, Eawag, Switzerland.*

2011 - 2015 **Tenure Track** *Urban Water Management, Eawag, Switzerland.*

2008 - 2010 **Academic Research Fellow (Adjunct Fellow since 2011, Honorary Fellow since 2013)** *Advanced Water Management Centre, The University of Queensland, Brisbane, Australia.*

2006 - 2008 **Post-Doctoral Researcher** *Environmental Engineering, Eawag, Switzerland*.

4. Institutional responsibilities

Group leader and head of Department (as of 1st July 2022) *Urban Water Management, Eawag.*

5. Approved research projects

2022 - 2026 **WISE** "**W**astewater-based **I**nfectios Disease **S**urveillanc**e**" *SNF Sinergia*, Co-PI, CHF 3.6 Mio. CHF.

2021 - 2022 **AbwasSARS-CoV-2** "Räumlich aufgelöste Abschätzung der effektiven Reproduktionszahl von SARS-CoV-2 im CH-Abwasser" *Swiss Federal Office of Public Health*, Co-PI, CHF 1.4 Mio. CHF.

2020 - 2024 **DroMedAric** "**Dro**gen, **Med**ikamente, **A**lkohol- und Tabak**r**ückstände: Abwasserbas**i**erte Epidemi**o**logie in der Schweiz", *Swiss Federal Office of Public Health*, Co-PI, CHF 440'000.

2020 - 2024 **mikroMISCH** "Mikroverunreinigungen in Mischwasserentlastungen", *Swiss Federal Office for the Environment,* Co-PI, CHF 363'000.

2020 - 2024 **Understanding Australia by analysing wastewater during the Census 2021** ARC Linkage LP19010101124. Partner.

2020 - 2021 **COWWID-19** "Surveillance of SARS-**Co**V-2 in **W**aste**w**ater - an Early Warning System to Track the Spatio-temporal Development of COV**ID-19**", *SNF special call on coronavirus*, Co-PI, CHF 183'000.

2017 - 2020 **MS²field** "High-frequency in-situ measurements of organic contaminants in the aquatic environment with a transportable high resolution mass spectrometer", *Eawag discretionary funding,* Co-PI, co-supervision of a postdoctoral student, CHF 178'000.

2014 - 2020 **DIMES II** "Diffuse Micropollutant Emission from Urban Settlements", *Swiss Federal Office for the Environment,* supervision of a PhD student together with Prof. M. Maurer, PI, CHF 349'700.

2016 - 2018 **TransDrugS** "TRANSformation of illicit DRUGs in Sewers", *State Secretariat for Education, Research and Innovation SERI, COST ES1307, C15.0092*, supervision of a postdoctoral student, PI, CHF 176'000.

2015 - 2018 **Understanding the fate and transport of selected biomarkers in sewers**. ARC Discovery DP150100645. Partner, co-supervision of two postdoctoral students, AUD 377'100.

2015 - 2018 **Estimating per capita use and release of chemicals by wastewater analysis**. ARC Linkage LP150100364. Partner, AUD 1'029'000.

2012 - 2017 **SEWPROF** "A new paradigm in drug use and human health risk assessment: Sewage profiling at the community level". EU FP7, Marie Curie ITN Initial Training Network, Grant agreement no 317205, supervision of a PhD student, Co-PI, CHF 293'400.

2011 - 2012 **DIMES** "Diffuse Micropollutant Emission from Urban Settlements". *Swiss Federal Office for the Environment*, supervision of a postdoc, PI, CHF 201'000.

2011 **Assessing the transformation of cocaine and its metabolite benzoylecgonine in full scale.** *American National Science Foundation, Catalyzing New International Collaborations Grant,* PI, USD 23,256.

2010 - 2012 **Hospital wastewater.** Within the project "Urban Water Security Research Alliance", supervision of a postdoc, PI, AUD 340,000.

2008 - 2010 **Source control with focus on hospital wastewater and sampling.** Within the project "Urban Water Security Research Alliance", Co-PI, 3 years, AUD 300'000 .

2006 - 2008 **Modeling micropollutant mass fluxes from urban drainage in Swiss surface waters**, within project "MicroPoll", Co-PI, 2.5 years, CHF 300'000.

6. Supervision of junior researchers at graduate and postgraduate level [direct (co-)supervision]

2020 ongoing Viviane Furrer mikroMISCH

2020 ongoing Stephan Baumgartner DroMedArio

2017 - 2020 Dr. M. Stravs **MS2field** - High-frequency in-situ measurements of organic contaminants in the aquatic environment with a transportable high resolution mass spectrometer.

2014 - 2019 Mutzner, L. **DIMES** - Diffuse Micropollutant Emissions from Urban Areas – combined and separate sewer overflows. (PhD defence 20 March 2019, successful; now employed as postdoc in my group)

2018 Bohrer C. Master thesis ETHZ.
Zheng Y. Master thesis ETHZ.

2015 *Ignasi Aymerich*. Visiting PhD student from Catalan Institute for Water Research (ICRA).
Pedram Ramin. Visiting PhD student from Danish Technical University.

2013 - 2017 McCall, A.K. *Ph.D. thesis (supervisor, advisor: Prof. E. Morgenroth (ETH/Eawag).*
Novic, A. PhD student, The University of Queensland.

2013 O'Brien, J. PhD student, The University of Queensland.

2012 Sägesser D. *Bachelor thesis, ETHZ.*

2011 - 2012 Dr. P. Staufer Diffuse Micropollutant Emission from Urban Settlements

2011 Eppler J.M. *4th semester project work, D-UWIS, ETHZ.*
Scrugli D. and Truong S., *ZHAW School of engineering.*

2010 - 2013 Brewer A.J., *Ph.D. thesis (co-supervisor), Oregon State University,* main supervisor Prof. Dr. J. Field.

2010 - 2014 Foon Yin Lai, *Ph.D. thesis (co-supervisor), The University of Queensland (EnTox and AWMC*, main supervisor Prof. Dr J.F. Mueller).

7. Teaching activities

2006 - 2007 Pharmaceuticals and Environment (ETH course number 535-0020-00L), 2006-2007, Swiss Federal Institute of Technology Zurich, ETH, *Co-Lecturer*

2005 Minimizing Sampling and Online Measurement Uncertainty (course for scientists and practitioners), Swiss Federal Institute of Aquatic Science and Technology, Eawag, *Organizer and Lecturer*

2000 - 2003 Urban drainage (Siedlungsentwässerung, ETH course number 102-0236-00), 2000-2003, Swiss Federal Institute of Technology Zurich, ETH, *Co-Lecturer*

8. Memberships in panels, boards, etc., and individual scientific reviewing activities

Member of PhD committee

2021 ongoing Maner J., EPFL, Switzerland. (member of committee)

2019 (20 Mar) Mutzner L., ETHZ, Switzerland. (co-supervisor, co-referee)

2018 (10 Jun) Kiilerich B., Aalborg University, Denmark. (external expert final exam)

2017 (28 Mar) McCall A., ETHZ, Switherland. (co-supervisor, co-referee)

2015 (11 Dec) Béen F., Université de Lausanne, Switzerland. (external expert final exam)

2015 (8 Jun) Snip L., Danish Technical University, Copenhagen, Denmark. (external expert final exam)

2011 **Advisory board member** for the European project ScorePP (Source Control Options for Reducing Emissions of Priority Pollutants", contract no. 037036).

Reviewer Applied Microbiology & Biotechnology, Chemosphere, Drug & Alcohol Dependence, Drug & Alcohol Review, Environmental Science & Technology, Environmental Health Perspective, Environment International, Forensic Science International, Tobacco Control, Water Research, Water Science & Technology, Science of the Total Environment.

9. Active memberships in scientific societies, fellowships in renowned academies

2011 - present **Co-founder and member of SCORE**: Sewage Analysis CORe group Europe. Strategic planning and execution of trans-national/-disciplinary research in drug epidemiology. Link

10. Organisation of conferences	
2019	Co-organizer (scientific and organizing committee) Testing the Waters IV, Foshan, China.
2015	Chair of Testing the Waters II, second conference on wastewater-based epidemiology (>100 participants), Monte Verità, Ascona, Switzerland.
2013	Co-organizer (scientific and organizing committee) Micropoll, Zürich, Switzerland.
11. Prizes, awards, fellowships	
2015	**EMCDDA Scientific Paper Award** in the category Population based and clinical epidemiology. Link
2014	**Among best ES&T papers 2013** Third Runner-Up in category *Environmental Technology* Link
2013	**Shortlisted for td-award as one of three finalists** in recognition of an outstanding transdisciplinary project pushing the boundaries of transdisciplinary research. td-net, Swiss Inter- and Transdisciplinarity Day 2013, 21 October 2013, Bern, Switzerland.
2008 - 2010	**Personal fellowship for prospective researcher** Swiss National Science Foundation Grant PBEZP2-122958 for postdoc at The University of Queensland, Brisbane, Australia.
2005	**Winner of the first Poul Harremoës Award** Best paper presented by a young author. 10th International Conference on Urban Drainage, 21-26 August 2005, Copenhagen, Denmark.
12.	**Career breaks**
	Dual-career family with three children (date of births May 2012, Jul 2015 and Jul 2015): i) reduced traveling [conference attendance since 2015], ii) 80% employment [Feb 2017 to Dec 2018, now 90% employment].

Research output 2016 - 2022 Christoph Ort (Eawag, Switzerland)

1. Publications in international peer-reviewed scientific journals since 2016

(co-)supervised MSc, PhD or postdoc, *corresponding author,
IF=impact factor of journal at time of article published

Citation metrics (scopus profile 10 May 2022)

Total articles: 83 (book chapters and errata excluded)

Sum of times cited: 6422

h-index: 41 (self-citations excluded)

Link to publication list in institutional repository

1. Cariti et al. (in review) Wastewater reveals the spatio-temporal spread of SARS-CoV-2 in the Canton of Ticino (Switzerland) during the onset of the COVID-19 pandemic. ***ES&T Water***
2. Jahn et al. (accepted) Wastewater-based genomic epidemiology of SARS-CoV-2 variants: early detection, surveillance, and fitness estimation. ***Nature Microbiology***
   medrxiv.org/content/10.1101/2021.01.08.21249379v2
3. Huisman et al. (in press) Wastewater-based estimation of the effective reproductive number of SARS-CoV-2. ***Environmental Health Perspective*** *10.1289/EHP10050*
   medrxiv.org/content/10.1101/2021.04.29.21255961v2
4. Caduff et al. (2022) Inferring transmission fitness advantage of SARSCoV- 2 variants of concern from wastewater samples using digital PCR, Switzerland, December 2020 through March 2021. ***Eurosurveillance*** 10.2807/1560-7917.ES.2022.27.10.2100806
5. Fernandez-Cassia X., Scheidegger A., Bänziger C., Caritia F., Tuñas Corzon A., Ganesanandamoorthy A., Lemaitre J.C., **Ort C.**, Julian T.R., Kohn T. ***(2021)*** Wastewater monitoring outperforms case numbers as a tool to track COVID-19 incidence dynamics when test positivity rates are high. Water Research 200 117252 *IF 9.130* 10.1016/j.watres.2021.117252
6. Stravs M.A., Stamm C., **Ort C.***, Singer H.* ***(2021)*** Transportable Automated HRMS Platform "MS2field" Enables Insights into Water-Quality Dynamics in Real Time. ***Environmental Science & Technology Letters 2021,*** 8(5), pp. 373–380 *IF 7.678* 10.1021/acs.estlett.1c00066
7. Mutzner L., Bohren C., Mangold S., Bloem S., **Ort C.*** ***(2020)***. Spatial Differences among Micropollutants in Sewer Overflows: A Multisite Analysis Using Passive Samplers. Environmental Science & Technology 54(11), pp. 6584–6593 *IF 7.864* 10.1021/acs.est.9b05148
8. González-Mariño I. , Baz-LombaJ.A., AlygizakisN.A., Andrés-CostaM.J., BadeR., Bannwarth A., BarronL.P., BeenF., Benaglia L., Berset J.-D., Bijlsma L., Bodík, I., Brenner A., Brock A.L., Burgard D.A., Castrignanò E., Celma A., Christophoridis C.E., Covac, A., Delemont O., de Voogt P., Devault D.A., Dias M.J., Emke E., Esseiva P., Fatta-Kassinos D., Fedorova G., Fytianos K., Gerber, C., Grabic R., Gracia-Lor E., Grüner S., Gunnar T., Hapeshi E., Heath E., Helm B., Hernández F., Kankaanpaa A., Karolak S., Kasprzyk-Hordern, B., Krizman-Matasic I., Lai F.Y., Lechowicz W., Lopes A., López de Alda M., López-García E., Löve A.S.C., Mastroianni N., McEneff G.L., Montes R., Munro K., Nefau T., Oberacher H., O'Brien J.W., Oertel R., Olafsdottir K., Picó Y., Plósz B.G., Polesel F., Postigo C., Quintana J.B., Ramin P., Reid M.J., Rice J., Rodil R., Salgueiro-González N., Schubert S., Senta I., Simões S.M., Sremacki M.M., Styszko Kl, Terzic S., Thomaidis N.S., Thomas K.V., Tscharke B.J., Udrisard R., van Nuijs A.L.N., Yargeau V., Zuccato E., Castiglioni S., **Ort C.** ***(2020)*** Spatio-temporal assessment of illicit drug use at large scale: evidence from seven years of international wastewater monitoring. ***Addiction*** 115(1), pp. 109-120 *IF 6.851* 10.1111/add.14767
9. Mutzner L., Vermeirssen E.L.M., Mangold S., Maurer M., Scheidegger A., Singer H., Booij K., **Ort C.*** ***(2019)***. Passive samplers to quantify micropollutants in sewer overflows: accumulation behaviour and field validation for short pollution events ***Water Research*** 160, pp. 350-360 *IF 7.913* 10.1016/j.watres.2019.04.012
10. Blumensaat F., Leitão J.P., **Ort C.***, Rieckermann J., Scheidegger A., Vanrolleghem P.A., Villez, K. ***(2019)*** How Urban Storm- And Wastewater Management Prepares for Emerging Opportunities and Threats: Digital Transformation, Ubiquitous Sensing, New Data Sources, and beyond - A Horizon Scan ***Environmental Science & Technology*** 53(15), 8488-8498. *IF 7.149* 10.1021/acs.est.8b06481
11. Tscharke B.J., O'Brien J.W., Ort C., Grant S., Gerber C., Bade R., Thai P.K., Thomas K.V., Mueller J.F. ***(2019)*** Harnessing the Power of the Census: Characterizing Wastewater Treatment Plant Catchment Populations for Wastewater-Based Epidemiology ***Environmental Science & Technology*** 53(17), 10303-10311. *IF 7.149* 10.1021/acs.est.9b03447

12. Zheng Y., Mutzner L., **Ort C.**, Kaegi R. and Gottschalk F.Modelling *(2019)* Modelling engineered nanomaterials in wet-weather discharges ***NanoImpact*** 16,100188 10.1016/j.impact.2019.100188

13. Gao J., Li J., Jiang G., Shypanski A.H., Nieradzik L.M., Yuan, Z., Mueller J.F., **Ort, C.** and Thai P.K. ***(2019)*** Systematic evaluation of biomarker stability in pilot scale sewer pipes. ***Water Research*** 151, 447-455. *IF 7.913* 10.1016/j.watres.2018.12.032

14. O'Brien J.W., Grant S., Banks A.P.W., Bruno R., Carter S., Choi P.M., Covaci A., Crosbie N.D., Gartner C., Hall W., Jiang G., Kaserzon S., Kirkbride K.P., Lai F.Y., Mackie R., Marshall J., **Ort C.**, Paxman C., Prichard J., Thai P., Thomas K.V., Tscharke B. and Mueller J.F. (2019) A National Wastewater Monitoring Program for a better understanding of public health: A case study using the Australian Census. Environment International, 122, 400-411. *IF 7.297* 10.1016/j.envint.2018.12.003

15. Mutzner L., Vermeirssen E. and **Ort C.*** ***(2019)*** Passive samplers in sewers and rivers with highly fluctuating micropollutant concentrations – better than we thought. ***Journal of Hazardous Materials*** *361, 312-320. IF 6.434* 10.1016/j.jhazmat.2018.07.040

16. Kinyua J., Negreira N., McCall A.-K., Boogaerts T., **Ort C.**, Covaci A., van Nuijs A.L.N. ***(2018)*** Investigating in-sewer transformation products formed from synthetic cathinones and phenethylamines using liquid chromatography coupled to quadrupole time-of-flight mass spectrometry. ***Science of the Total Environment*** 634, 331-340. *IF 5.589* 10.1016/j.scitotenv.2018.03.253

17. van Nuijs A.L.N., Been F., Lai F.Y., Andres-Costa M.J., Barron L., Baz-Lomba J.A., Berset J-D., Benaglia L., Bijlsma L., Burgard D., Castiglioni S., Christophoridis C., Covaci A., de Voogt P., Emke E., Fick J., Hernandez F., Gerber C., Gonzalez-Marino I., Grabic R., Gunnar T., Hapeshi E., Kannan K., Karolak S., Kasprzyk-Hordern B., Kokot Z., Li A., Li X., Lopes A, Love A., Lopez de Alda M., Meierjohann A., Meyer M., Oberacher H., O'Brien J., Oertel R., Reid R., Schneider S., Simoes S., Terzic S., Thomaidis N., Thomas K., Yargeau V. and **Ort C.** ***(2018)*** Multi-year interlaboratory exercises for the analysis of illicit drugs and metabolites in wastewater: development of a quality control system. ***Trends in Analytical Chemistry*** 103, 34-43. *IF 8.442* 10.1016/j.trac.2018.03.009

18. Novic A.J., **Ort C.**, O'Brien D.S., Lewis S.E., Davis A.M. and Mueller J.F. (***2018***) Understanding the uncertainty of estimating pesticide and nutrient mass loads in a flood event with guidance on estimator selection. ***Water Research*** *132, 99-110. IF 7.913* 10.1016/j.watres.2017.12.055

19. Castrignanò E., Yang Z., Bade R., Baz-Lomba, J.A., Castiglioni S., Causanilles A., Covaci A., Gracia-Lor E., Hernandez F., Kinyua J., McCall A.-K., van Nuijs A.L.N., Ort C. Plósz B., Ramin P., Rousis N.I., Ryu Y., Thomas K., de Voogt P. and Zuccato E. ***(2018)*** Enanatiomeric profiling of chiral illicit drugs in a pan-European study. ***Water Research*** 130, *151-160. IF 7.913* 10.1016/j.watres.2017.11.051

20. Besmer M.D., Hammes F.*, Sigrist J.A. and **Ort C.** ***(2017)*** Optimizing monitoring strategies for the identification of microbial short-term dynamics and peak concentrations in raw and treated drinking water. ***Frontiers in Microbiology*** *IF 4.259* 10.3389/fmicb.2017.02229

21. O'Brien J.W., Banks A.P.W., Novic A.J., Mueller J.F., Jiang G., **Ort C.**, Eaglesham, G. Yuan Z. and Thai P.K. ***(2017)*** Impact of in-Sewer Degradation of Pharmaceutical and Personal Care Products (PPCPs) Population Markers on a Population Model. ***Environmental Science & Technology*** 51(7), 3816-3823. *IF 7.149* 10.1021/acs.est.6b02755

22. McCall A.-K., Palmitessa R., Blumensaat F., Morgenroth E. and **Ort C.*** ***(2017)*** Modeling in-sewer transformations at catchment scale – implications on drug consumption estimates in wastewater-based epidemiology. ***Water Research*** *122,655-668. IF 6.942* 10.1016/j.watres.2017.05.034

23. Causanilles A., Baz-Lomba J.A., Burgard D.A., Emke E., González-Mariño I., Krizman-Matasic I., Li A., Löve A.S.C., McCall A.-K., Montes R., van Nuijs A.L.N., **Ort C.**, Quintana J.B., Senta I., Terzic S., Hernandez F., de Voogt P., Bijlsma L. (***2017***) Improving wastewater-based epidemiology to estimate cannabis use: focus on the initial aspects of the analytical procedure. ***Analytica Chimica Acta*** *988, 27-33. IF 4.950* 10.1016/j.aca.2017.08.011

24. Aymerich I., Acuña V., **Ort C.**, Rodríguez-Roda I. and Corominas Ll. ***(2017)*** Fate of organic microcontaminants in wastewater treatment and river systems: An uncertainty assessment in view of sampling strategy, and compound consumption rate and degradability. ***Water Research*** 125, 152-161. *IF 7.913* 10.1016/j.watres.2017.08.011

25. Bade R., Bijlsma L., Sancho J.V., Baz-Lomba J.A., Castiglioni S., Castrignanò E., Causanilles A., Gracia-Lora E., Kasprzyk-Hordern B., Kinyua J., McCall A.-K., van Nuijs A.L.N., **Ort C.**, Plósz B.G., Ramin P., Rousis N.I., Ryu Y., Thomas K.V., de Voogt P., Zuccato E. and Hernández F. ***(2017)*** Liquid chromatography-tandem mass spectrometry determination of synthetic cathinones and phenethylamines in influent wastewater of eight European cities. ***Chemosphere*** *168, 1032-1041. IF 3.137* 10.1016/j.chemosphere.2016.10.107

26. Ryu Y., Gracia-Lor E., Bade R., Baz-Lomba J.A., Bramness J.G., Castiglioni S., Castrignanò E., Causanilles A., Covaci A., de Voogt P., Hernandez F., Kasprzyk-Hordern B., Kinyua J., McCall A.-K., **Ort C.**, Plósz B.G., Ramin P., Rousis N.I.,

Reid M.J., Thomas K.V. ***(2016)*** Increased levels of the oxidative stress biomarker 8-iso-prostaglandin F 2α in wastewater associated with tobacco use. ***Scientific Reports*** 6,39055. https://www.nature.com/articles/srep39055

27. Hernández F., Castiglioni S., Covaci A., de Voogt P., Emke E., Kasprzyk-Hordern B., **Ort C.**, Reid M., Sancho J.V., Thomas K.V., van Nuijs A.L.N., Zuccato E. and Bijlsma L. ***(2016)*** Mass spectrometric strategies for the investigation of biomarkers of illicit drug use in wastewater. ***Mass Spectrometry Reviews*** *37(3), 258-280. IF 9.526* 10.1002/mas.21525

28. McCall A.-K., Scheidegger A., Madry M.M., Steuer A.E., Weissbrodt D.G., Vanrolleghem P.A., Kraemer T., Morgenroth E. and **Ort C.*** ***(2016)*** Influence of Different Sewer Biofilms on Transformation Rates of Drugs. ***Environmental Science & Technology***, 50(24), 13351-13360. *IF 7.149* 10.1021/acs.est.6b04200

29. Baz-Lomba J.A. Salvatore S., Gracia-Lor E., Bade R., Castiglioni S., Castrignano E., Causanilles A., Hernandez F., Kasprzyk-Hordern B., Kinyua J., McCall A.K., van Nuijs A.L.N., **Ort C.**, Plósz B.G., Ramin P., Reid M., Rousis N.I., Ryu Y., de Voogt P., Bramness J. and Thomas K.V. (***2016***) Comparison of pharmaceutical, illicit drug, alcohol, nicotine and caffeine levels in wastewater with sale, seizure and consumption data for 8 European cities. ***BMC Public Health*** 16, 1-11. 10.1186/s12889-016-3686-5

30. Banta-Green C.J. Brewer A.J., **Ort C.**, Helsel D.R., Williams J.R. and Field J.A. ***(2016)*** Using wastewater-based epidemiology to estimate drug consumption—Statistical analyses and data presentation. ***Science of the Total Environment*** 568, 856–863. *IF 5.589*10.1016/j.scitotenv.2016.06.052

31. Gao J., O'Brien J., Du P., Li X., **Ort C.**, Mueller J.F. and Thai P.K. ***(2016)*** Measuring selected PPCPs in wastewater to estimate the population in different cities in China. ***Science of The Total Environment*** 568, 164-170. *IF 5.589* 10.1016/j.scitotenv.2016.05.216

32. Lai F.Y., O'Brien J.W., Thai P.K., Hall W., Chan G, Bruno R., **Ort C.**, Prichard J., Carter S., Anuj S., Kirkbride P.K., Gartner C., Humphries M. and Mueller J.F. ***(2016)*** Cocaine, MDMA and methamphetamine residues in wastewater: Consumption trends (2009–2015) in South East Queensland, Australia. ***Science of The Total Environment*** 568, 803-809. *IF 5.589* 10.1016/j.scitotenv.2016.05.181

33. Thomaidis N.S., Gago-Ferrero P., **Ort C.**, Maragou N.C., Alygizakis N.A., Borova V.L. and Dasenaki M.E. (***2016***) Reflection of Socioeconomic Changes in Wastewater: Licit and Illicit Drug Use Patterns. ***Environmental Science & Technology*** 50, 10065-10072. *IF 7.149* 10.1021/acs.est.6b02417

34. Mutzner L., Staufer P. and **Ort C.*** (***2016***) Model-based screening for critical wet-weather discharges related to micropollutants from urban areas. ***Water Research*** 104, 547-557. *IF 7.913* 10.1016/j.watres.2016.08.003

35. Van Dyken E., Lai F.Y., Thai P.K., **Ort C.**, Bruno R., Hall W., Kirkbride P., Mueller J.F. and Prichard J. ***(2016)*** Challenges and opportunities in using wastewater analysis to measure drug use in a small prison facility. ***Drug and Alcohol Review*** 35(2), 138-145. 10.1111/dar.12156

36. Ryu Y., Barceló D., Barron L.P., Bijlsma L., Castiglioni S., de Voogt P., Emke E., Hernández F., Lai F.Y., Lopes A., López de Alda M., Mastroianni N., Munro K., O'Brien J., **Ort C.**, Plósz B.G., Reid M.J., Yargeau V. and Thomas K.V. ***(2016)*** Comparative measurement and quantitative risk assessment of alcohol consumption through wastewater-based epidemiology: An international study in 20 cities. ***Science of the Total Environment*** 565, 977-983. *IF 5.589* 10.1016/j.scitotenv.2016.04.138

37. McCall A.K., Bade R., Kinyua J., Lai F.Y., Thai P.K., Covaci A., Bijlsma L., van Nuijs A.L.N. and **Ort C.*** ***(2016)*** Critical review on the stability of illicit drugs in sewers and wastewater samples. ***Water Research*** 88, 933-947. *IF 7.913* 10.1016/j.watres.2015.10.040

38. Burdon F.J., Reyes M., Alder A.C., Joss A., Ort C., Räsänen K., Jokela J., Eggen R.I.L. and Stamm C. ***(2016)*** Environmental context and magnitude of disturbance influence trait-mediated community responses to wastewater in streams ***Ecology and Evolution*** 6 (12), 3923-3939. *IF 2.34* 10.1002/ece3.2165

39. Humphries M.A., Bruno R., Lai F.Y., Thai P.K., Holland B.R., O'Brien J.W., **Ort C.** and Mueller J.F. ***(2016)*** Evaluation of monitoring schemes for wastewater-based epidemiology to identify drug use trends using cocaine, methamphetamine, MDMA and methadone. ***Environmental Science & Technology*** 50 (9), 4760-4768. *IF 7.149* 10.1021/acs.est.5b06126

40. Kuroda K., Itten R., Kovalova L., **Ort C.**, Weissbrodt D. and McArdell C.S. ***(2016)*** Hospital-use pharmaceuticals in Swiss waters modeled at high spatial resolution. ***Environmental Science & Technology*** 50 (9), 4742-4751. *IF 7.149* 10.1021/acs.est.6b00653

41. Been F., Bijlsma L., Benaglia L., Berset J.-D., Botero-Coy A.M., Castiglioni S., Kraus L., Zobel F., Schaub M.P., Bücheli A., Hernández F., Delémont O., Esseiva P. and **Ort C.*** *(2016)* Assessing geographical differences in illicit drug consumption - A comparison of results from epidemiological and wastewater data in Germany and Switzerland. ***Drug and Alcohol Dependence*** 161, 189-199. *IF 3.466* 10.1016/j.drugalcdep.2016.02.002

42. Brewer A.J., Banta-Green C.J., **Ort C.**, Robel A.E. and Field J.A. ***(2016)*** Wastewater testing compared to random urinalyses for the surveillance of illicit drug use in prisons. ***Drug and Alcohol Review*** 35(2), 133-137. *IF 2.789* 10.1111/dar.12185

2. Peer-reviewed books/monographs

Ort C.*, Bijlsma L.*, Castiglioni S., Covaci A., de Voogt P., Emke E., Hernández F., Reid M., van Nuijs A.L.N., Thomas K.V. and Kasprzyk-Hordern B. *(2018)* Wastewater Analysis for Community-Wide Drugs Use Assessment. In Handbook of Experimental Pharmacology 252, New Psychoactive Substances, Pharmacology, Clinical, Forensic and Analytical Toxicology. Eds. Maurer H.H and Brandt S.D. Springer 10.1007/164_2018_111 *co-first authors.

3. Peer-reviewed conference proceedings

Singer H., Anliker S., Stravs M., Ort C., Ruppe S. and Hollender J. (2018) Contaminant screening in the aquatic environment using high resolution mass spectrometry – methodologies and real world applications. MS Envi Day Napoli, Italy, 1-3 October 2018.

Mutzner L., Mangold S., Maurer M., Scheidegger A., Singer H., Vermeirssen E. and **Ort C.** (2017) Passive sampling: An efficient way to monitor micropollutants in sewer overflows? *14th International Conference on Urban Drainage (ICUD)*, Prague, Czech Republic.

Mutzner L., Staufer P. and **Ort C.** (2015) Screening for critical wet-weather discharges of micropollutants. 22nd European Junior Scientist Workshop (EJSW), Chichillianne, France.

McCall A.K., Morgenroth E. and **Ort C.** (2015) Fate and behaviour of illicit drugs in sewers 2nd Testing the Waters Conference (Wastewater-based epidemiology), Monte Verita, Ascona, Switzerland 11-15 October 2015.

McCall A.K., Morgenroth E. and **Ort C.** (2014) In-sewer Transformation of Illicit Drugs in Wastewater. 13th International Conference on Urban Drainage, Sarawak, Malaysia, 7-12 September 2014.

4. Contributions to books

Ort C. and Bijlsma L. (co-first authors), Castiglioni S., Covaci A., de Voogt P., Emke E., Hernández F., Reid M., van Nuijs A.L.N., Thomas K., Kasprzyk-Hordern B. *(2018)* "Wastewater analysis for community-wide drugs use assessment" in Handb. Exp. Pharmacology on Drugs of abuse. Editors Maurer H. and Brandt S.D.

5. Patents and licenses

none

6. Oral contributions to international conferences

Bosshard J., Singer H., Stamm C., **Ort C.**, Longrée P., Stravs M.A., Moehring T., Boehm G. (2021) Automated real-time monitoring of pharmaceuticals in treated wastewater with the transportable LC-HRMS platform MS2Field Symposium "The Chemical Monitoring Station of the Future" Koblenz (online) 3-15 April 2021.

Ort C., Becker P., Stravs M., Singer H.P., Stamm C., Bolliger R., Boehm G. and Moehring T. Real Real-Time Measurements of illicit drugs in Wastewater - A Pipe Dream or useful Reality? 4th International Testing the Waters conference, Foshan, China, 29 October - 1 November 2019 (link).

Mutzner L., Mangold S., Dicht S., Bohren C., Vermeirssen E.L.M., Maurer M., Scheidegger A., Singer H.P., Booij K. and **Ort C.** (2019) 20 Combined Sewer Overflows Investigated with Passive Samplers for 13

Micropollutants. Aqua Urbanica, Rigi Kaltbad, Switzerland. 9-10 September 2019. YouTube Presentation 14

Ort C., McCall A.K., Koller A., Palmitessa R., Blumensaat F. and Morgenroth E. (2017) Do environmental conditions in sewers influence drug consumption estimates in my catchment? LX Addictions and 3rd Testing the Waters Conference (Wastewater-based epidemiology - current applications and future perspectives), Lisbon, Portugal, 26/27 October 2017.

Ort C., Schaub M., Scheidegger A. and Bücheli A. (2015) Objective estimation of number of COC users. 2nd Testing the Waters Conference (Wastewater-based epidemiology), Monte Verita, Ascona, Switzerland, 11-15 October 2015.

Ort C., van Nuijs A.L.N. and Bijlsma L. (2015) Can the cocaine/benzoylecgonine ratio in sewage explain different usage patterns and/or in-sewer behavior? 2nd Testing the Waters Conference (Wastewater-based epidemiology), Monte Verita, Ascona, Switzerland 11-15 October 2015.

7. Outreach activities (e.g. public engagement in science, technology and knowledge transfer activities, scientific art performances, etc.)

Publication in a national technical journal, considered outreach to practice.

Dax, A., Stravs, M., Stamm, C., Ort, C., la Cecilia, D., & Singer, H. (2020). MS2field: Mikroverunreinigungen mobil messen. Aqua & Gas, 100(12), 14-19. (link)

Mutzner, L., Mangold, S., Dicht, S., Bohren, C., Vermeirssen, E. L. M., Scheidegger, A., Singer H., Ort, C. (2019). Mikroverunreinigungen aus Siedlungen. Messungen in 20 Mischabwasserentlastungen mit Passivsammler. Aqua & Gas, 99(10), 28-35. (link)

Logar, I., Brouwer, R., Maurer, M. and Ort, C. (2015) Wert der Spurenstoffelimination. Eine ökonomische Analyse zum Ausbau Schweizer Abwasserreinigungsanlagen. Aqua & Gas 95(2), 42-48. (link)

Publications for non-scientific audiences (selection)

Castiglioni S., Bijlsma L., Covaci A., de Voogt P., Emke E., Harman C, Hernández F., Kasprzyk-Hordern B., **Ort C.**, van Nuijs A.L.N. and Zuccato E. (2016) Estimating community drug use through wastewater analysis. EMCDDA Insight Update. European Monitoring Centre for Drugs and Drug Addiction. Lisbon, Portugal.

Kasprzyk-Hordern B., Bijlsma L., Castiglioni S., Covaci A., de Voogt P., Emke E., Hernandez F., **Ort C.**, Reid M., van Nuijs A. and Thomas K. (2014). Wastewater-based epidemiology for public health monitoring. Water and Sewerage Journal (4) 25.

Presentation at national conferences focused on practice and webinars (selection, all by invitation)

Ort C., Kohn T., Julian T.R., Fernandez-Cassi X. (2021) Abwasser als Covid-19 Indikator. Point de Presse BAG, Berne 9 March 2021.

Ort C., Kohn T., Julian T.R., Fernandez-Cassi X. (2020) Surveillance of SARS-CoV-2 in Wastewater - an Early Warning. System to Track the Spatio-temporal Development of COVID-19. Paneldiskussion: Webinar COVID-19 Abwasser- und Fäkalschlamm-Frühwarnsystem. Deutsche Gesellschaft für Internationale Zusammenarbeit GIZ and GWOPA/UN Habitat. Webinar 16 June 2020.

Mutzner L. and **Ort C.** Micropollutants in Combined Sewer Overflows (2019) Kanalisationsforum VSA, Rapperswil, Switzerland. 15-16 May 2019.

8. General contributions to science (e.g. spokesperson for international experiments, leader of international expeditions, founder of international networks and training programmes, etc.)

- Co-founder of SCORE **S**ewage analysis **COR**e group **E**urope (see major achievements)

9. Other artefacts with documented use (e.g. maps, methods, prototype demos, software, databases, design, arXiv-articles, contributions to big data collaborations, etc.).

- Coordinator of data collection and quality control in the context of the annual monitoring of illicit drugs in wastewater (open data repository, 92 co-authors) https://doi.org/10.25678/000172