

Research Output

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Authorship follows the Guidelines by the Scientific Integrity Committee of the Swiss Academies of Arts and Sciences (2013)

1. International peer-reviewed publications

Aurea C. Chiaia-Hernández, Paul Zander, Tobias Schneider, Sönke Szidat, Ronald Lloren, and Martin Grosjean. 2020. A high-resolution historical record of plant protection products deposition documented by target and nontarget trend analysis in a Swiss lake under anthropogenic pressure. *Environ. Sci. Technol.*, 54 (20), pp 13090–13100. <https://doi.org/10.1021/acs.est.0c04842>

Aurea C. Chiaia-Hernández, Martin Scheringer, Adrian Müller, Greta Stieger, Daniel Wächter, Armin Keller, Marina G. Pintado Herrera, Pablo A. Lara-Martín, Thomas D. Bucheli, and Juliane Hollender. 2020. Target and suspect screening analysis reveals persistent emerging organic contaminants in soils and sediments. *Sci. Total Environ.*, 740, pp 140181. <https://doi.org/10.1016/j.scitotenv.2020.140181>

Nicolas Creusot, Carmen Casado-Martinez, **Aurea Chiaia-Hernandez**, Benoit J.D. Ferrari, Stephan Fischer, Qiuguo Fu1, Nicole Munz, Heinz Singer, Christian Stamm, Ahmed Tlili, Juliane Hollender. 2020. Retrospective screening of high-resolution mass spectrometry archived digital samples can improve environmental risk assessment of emerging contaminants: A case study on antifungal azoles. *Environ. Int.*, 139, pp 105708. <https://doi.org/10.1016/j.envint.2020.105708>

Pablo A. Lara-Martín, **Aurea C. Chiaia-Hernández**, Miriam Biel-Maeso, Rosa M. Baena-Nogueras, Juliane Hollender. 2020. Tracing urban wastewater contaminants into the Atlantic Ocean by nontarget screening. *Environ. Sci. Technol.*, 54 (7), pp 3996-4005. <https://doi.org/10.1021/acs.est.9b01895>

Raymmah Garcia, **Aurea Chiaia-Hernández**, Pablo A. Lara-Martín, Martin Loos, Juliane Hollender, Karl Oetjen, Christopher Higgins, and Jennifer Field. 2019. Suspect Screening of Hydrocarbon Surfactants in AFFFs and AFFF-Contaminated Groundwater by High Resolution Mass Spectrometry. *Environ. Sci. Technol.*, 51 (18), pp 10642-10651. <https://doi.org/10.1021/acs.est.9b01895>

Aurea C. Chiaia-Hernandez, Barbara F. Günthardt, Martin P. Frey, and Juliane Hollender. 2017. Unravelling contaminants in the Anthropocene using statistical analysis of LC-HRMS nontarget screening data as recorded in lake sediments. *Environ. Sci. Technol.*, 51 (21), pp 12547-12556. <https://doi.org/10.1021/acs.est.7b03357>

Aurea C Chiaia-Hernandez, Armin Keller, Daniel Wächter, Christine Steinlin, Louise Camenzuli1, Juliane Hollender and Martin Krauss. 2017. Long-term Persistence of Pesticides and TPs in Archived Agricultural Soil Samples and Comparison with Pesticide Application. *Environ. Sci. Technol.*, 51 (18), pp 10642-10651. <https://doi.org/10.1021/acs.est.7b02529>

Markus Moest, **Aurea C. Chiaia-Hernandez**, Martin P. Frey, Juliane Hollender and Piet Spaak. 2015. A Mixture of Environmental Organic Contaminants in Lake Sediments affect Hatching of Daphnia Resting Eggs. *Environ. Toxicol. Chem.* 34 (2), pp 338-345. <https://doi.org/10.1002/etc.2808>

Aurea C. Chiaia-Hernandez, Emma L. Schymanski, Praveen Kumar, Heinz P. Singer and Juliane Hollender. 2014. Suspect and nontarget screening approaches to identify organic contaminant records in lake sediments. *Anal. Bioanal. Chem.* 406 (28), pp 7323-7335. <https://doi.org/10.1007/s00216-014-8166-0>

Aurea C. Chiaia-Hernandez, Roman Ashauer, Markus Moest, Tobias Hollingshaus, Piet Spaak and Juliane Hollender. 2013. Bioaccumulation of Organic Contaminants from Sediments in Daphnia Resting Eggs. *Environ. Sci. Technol.*, 47 (18), pp 10667–10675. <https://doi.org/10.1021/es401763d>

Aurea C. Chiaia-Hernandez, Martin Krauss and Juliane Hollender. 2012. Screening of Lake Sediments for Emerging Contaminants by Liquid Chromatography Atmospheric Pressure Photoionization and Electrospray Ionization Couple to High Resolution Mass Spectrometry. *Environ. Sci. Technol.*, 47(2), pp 976-986 <https://doi.org/10.1021/es303888v>

Aurea C. Chiaia-Hernandez, Caleb Banta-Green and Jennifer A. Field. 2011. Interpreting Methamphetamine Levels in a High-Use Community. *Environ. Sci. and Pollut. R.*, 18 (9), pp 1471-1477. <https://doi.org/10.1007/s11356-011-0495-3>

Caleb J. Banta-Green, Jennifer A. Field, **Aurea C. Chiaia**, Daniel L. Sudakin, Laura Power, Luc de Montigny. 2009. The spatial epidemiology of cocaine, methamphetamine and 3,4-methylenedioxymethamphetamine (MDMA) use: a demonstration using a population measure of community drug load derived from municipal wastewater. *Addiction*, 104 (11), pp 1874-1880. <https://doi.org/10.1111/j.1360-0443.2009.02678.x>

Aurea C. Chiaia, Caleb Banta Green and Jennifer A. Field. 2008. Eliminating Solid Phase Extraction with Large-Volume Injection LC/MS/MS: Analysis of Illicit and Legal Drugs and Human Urine Indicators in US Wastewaters *Environ. Sci. Technol.*, 42 (23), pp 8841–8848. <https://doi.org/10.1021/es802309v>

Carin A Huset, **Aurea C Chiaia**, Douglas F Barofsky, Niels Jonkers, Hans-Peter E. Kohler, Christoph Ort, Walter Giger, and Jennifer A Field. 2008. Occurrence and Mass Flows of Fluorochemicals in the Glatt Valley Watershed, Switzerland. *Environ. Sci. Technol.*, 42 (17), pp 6369–6377. <https://doi.org/10.1021/es703062f>

2. Peer-reviewed books and monographs

None

3. Peer-reviewed conference proceedings and additional publications

Anna E., Sikorska, Andreas Scheidegger, **Aurea C Chiaia-Hernandez**, Juliane Hollender, Joerg Rieckermann Tracing of micropollutants sources in urban receiving waters based on sediment fingerprinting. 2012. *Conference Proceeding of the 9th International Conference on Urban Drainage Modelling (UDM), Belgrade, Serbia*

4. Contributions to books

None

5. Patents and licenses

None of relevance

6. Oral contributions to international conferences

June 2022: Platform presentation at the International Conference on Contaminated Sediments (ContaSed2021), University of Bern, Switzerland, virtual meeting. Aurea C. Chiaia-Hernandez, B. F. Günthardt, Martin P. Frey, J. Hollender, and Martin Grosjean. “High-resolution historical records of organic contaminant deposition documented by target and nontarget trend analysis in lakes under anthropogenic pressure”

June 2019: Platform presentation at the 17th International Conference on Chemistry and the Environment (ICCE 2019), Thessaloniki, Greece. Aurea C. Chiaia-Hernandez and Martin Grosjean. “Using lake sediments as a complementary tool in soil monitoring to prioritize plant protection products”

June 2018: Platform presentation at the International Paleolimnology Association – International Association of Limnology (IPA-IAL 2018), Stockholm, Sweden. Aurea C. Chiaia-Hernandez, B. F. Günthardt, Martin P. Frey and J. Hollender. “Characterizing the Anthropocene with High-Resolution Analysis of Chemical Contamination in Lake Sediments”

June 2017: Platform presentation at the 16th EuCheMS International Conference on Chemistry and the Environment (ICCE 2017), Oslo, Norway. Aurea C. Chiaia-Hernandez, B. F. Günthardt, Martin P. Frey and J. Hollender. “Prioritizing relevant nontarget contaminants using statistical analysis of LC-HRMS data of lake sediments”

June 2017: Platform presentation at the 16th EuCheMS International Conference on Chemistry and the Environment (ICCE 2017), Oslo, Norway. Aurea C. Chiaia-Hernandez, Armin Keller, Daniel Wächter, Martin Krauss, Greta Stieger, Martin Scheringer, Thomas D. Bucheli, and Juliane Hollender. “Top-down and bottom-up approaches to identify organic contaminants in soils”

May 2016: Platform presentation at the Non-Target Screening Conference, Monte Verità, Ascona, Switzerland. Aurea C. Chiaia-Hernandez, B. F. Günthardt, A. Müller, E. L. Schymanski and J. Hollender. “Temporal Trend Analysis on LC-HRMS Measurements of Lake Sediments to Prioritize Organic Contaminants”

September 2015: Platform presentation at the 15th EuCheMS International Conference on Chemistry and the Environment (ICCE 2015), Leipzig, Germany. Aurea C. Chiaia-Hernandez, Greta Stieger, Martin Scheringer, Thomas D. Bucheli, Armin Keller, Daniel Wächter, Juliane Hollender. “Early identification of organic contaminants by a multimedia fate model and high resolution mass spectrometry”

September 2015: Platform presentation at the 20th SETAC GLB, Zurich, Switzerland (Invited Speaker). Aurea C. Chiaia-Hernandez, Greta Stieger, Martin Scheringer, Thomas D. Bucheli, Armin Keller, Daniel Wächter, Juliane

Hollender. “Prioritizing organic contaminants in Swiss soils using environmental partitioning and high resolution mass spectrometry”

March 2015: Platform presentation at the International Conference on Contaminated Sediments (ContaSed2015), Monte Verità, Ascona, Switzerland (Invited Speaker). Aurea C Chiaia-Hernandez, R. Ashauer, M. Moest, P. Spaak and J. Hollender. “Temporal records of organic contaminants in lake sediments and their impact on Daphnia populations”

May 2013: Platform presentation at the 23rd SETAC Europe Annual Meeting, Glasgow, Scotland, UK. Aurea C Chiaia-Hernandez, Tobias Hollingshaus, Markus Moest, Piet Spaak and Juliane Hollender. “Can organic contaminants in lake sediments bioaccumulate in Daphnia resting eggs?”

May 2013: Poster presentation at the 23rd SETAC Europe Annual Meeting, Glasgow, Scotland, UK. Aurea C Chiaia-Hernandez, Emma Schymanski, Heinz Singer, and Juliane Hollender. “Target, suspect and non-target screening of lake sediments using HR-MS/MS”

May 2012: Poster presentation at the 6th SETAC World Congress 2012, Berlin, Germany. Aurea C Chiaia-Hernandez, Tobias Hollingshaus, Markus Moest, Piet Spaak, and Juliane Hollender. “Bioaccumulation of Xenobiotics in Daphnia diapausing eggs”

May 2012: Poster presentation at the 6th SETAC World Congress 2012, Berlin, Germany. Aurea C Chiaia-Hernandez, Heinz Singer, and Juliane Hollender. “Target and Non-target screening of lake sediments using HR-MS/MS”

August 2011: Platform presentation at the EmCon 2011, Copenhagen, Denmark. Aurea C Chiaia-Hernandez, Heinz Singer and Juliane Hollender. “Screening of medium polar organic contaminants in lake sediments using LC-APPI-HR-MS and LC-ESI-HR-MS”

November 2010: Platform presentation at the 27th IAEAC Symposium on LC/MS, Montreux, Switzerland. Aurea C Chiaia-Hernandez, Joris Buitter, Heinz Singer and Juliane Hollender. “Analysis of medium polar organic compounds in lake sediments using LC-APPI/ESI-HR-MS”

June 2008: Poster presentation at Gordon Research Conference 2008 Environmental Sciences: Water, Holderness, NH. Aurea C. Chiaia, Caleb Banta Green, Dan Sudakin, Laura Powers and Jennifer A. Field. “Large Volume (1,800 µL) Injection HPLC/MS/MS for the Quantitative Determination of Illicit Drugs and Human Urinary Biomarkers in Municipal Wastewater”

March 2008: Platform presentation at SETAC Pacific North West 2008 Annual Meeting, Corvallis, OR. Aurea C. Chiaia, Dan Sudakin, Laura Powers, Caleb Banta-Green, and Jennifer A. Field. “Illicit Drugs and Biomarkers in Raw Wastewater: a New Tool for Drug Epidemiology”

November 2007: Platform presentation at SETAC North America 28th Annual Meeting, Milwaukee, WI. Aurea C. Chiaia, Melissa M. Schultz, Carin A. Huset, Douglas F. Barofsky and Jennifer A. Field. “Large-Volume Injection LC-ESI/MS: Development and Application to Fluorochemicals and Illicit Drugs in Municipal Wastewater”

October 2007: Platform presentation at the 6th International Conference on Pharmaceuticals and Endocrine Disrupting Chemicals in Water, Costa Mesa, CA. Aurea C. Chiaia, Dan Sudakin, Laura Powers, Caleb Banta-Green, and Jennifer A. Field. “Illicit Drugs and Biomarkers in Raw Wastewater: a New Tool for Drug Epidemiology”

7. Outreach (see also organization of satellite events and summer schools in CV)

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| March 2022 | Invited Speaker - Environmental risk assessment in water, sediment and soil. Practical-oriented course, Centre Ecotox, Dübendorf, Switzerland
https://www.oekotoxzentrum.ch/expertenservice/weiterbildungsangebot/ |
| May 2021 | Invited Speaker – Transformation of Pesticide Governance (Trapego) Webinar Series
Title: Historical records of plant protection product deposition in Swiss lakes under anthropogenic pressure
www.ipw.unibe.ch/trapego |
| June 2021 | Invited Speaker Seminar-Series - Karlsruher Institute für Technology (KIT), Germany
Title: Organic contaminants in the Anthropocene unraveled by historical sediment records |
| February 2021 | Invited Speaker Seminar-Series Universidad de las Américas, Puebla, México
Title: Unravelling the Anthropocene with Sediment Records |
| October 2019 | Invited Speaker – Environmental Engineering Seminar Series, EPFL, Lausanne
Title: Characterizing Past and Present Environmental Impacts with High-Resolution Sediment Analysis |
| November 2019 | Invited Speaker – Centre Ecotox Workshop on Ecotoxicology and Sediment Quality, Olten, Switzerland. https://www.oekotoxzentrum.ch/expertenservice/weiterbildungsangebot/
Title: Anthropogenic Organic Contaminants in Sediments |

- Courses aim at administration, practice, research and industry
- Presentations and Discussion at Universities, Secondary and High Schools (Internationally)
- Outdoor exhibitions
- Presentations and Discussion in instrumentation user meetings (Thermo Fisher Scientific)
- International broadcast including OPB (USA), sinc (Spain), between others.

8. General contributions to science & 9. Other artefacts with documented use

Aurea C Chiaia-Hernández and Walter Giger. 2016. Conference report: 15th EuCheMS International Conference on Chemistry and the Environment – ICCE 2015. CHIMIA, 70 (1-2), 116-117

Aurea C Chiaia-Hernández and Walter Giger. 2016. Conference report: International Conference on Contaminated Sediments—ContaSed 2015. ESPR, 23 (11), 10304-10307

Christian Bogdal, **Aurea C Chiaia-Hernández** and Walter Giger. 2016. Recent sediments: environmental chemistry, ecotoxicology and engineering – Editorial. ESPR, 23(11), 10301-3

Aurea C Chiaia-Hernández and Walter Giger. 2015. Conference report: International conference on contaminated sediments, Monte Verità, Ascona, Switzerland—ContaSed. CHIMIA, 69 (7-8), 488-490