

Juliane Hollender

born October 24th, 1964 in Remscheid, Germany; two children

Work address: Swiss Federal Institute of Aquatic Science and Technology (Eawag)
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Professional experience

- 2005 - present **Eawag, Swiss Federal Institute of Aquatic Science & Technology**, Head of department of Environmental Chemistry
- 2010 - present **ETH Zürich, Switzerland**, Adjunct Professor in the Department of Environmental Systems Science
- 2007 - present **ETH Zürich, Switzerland**, Lecturer in the Department of Environmental Systems Sciences
- 2006 - 2014 **RWTH Aachen, Germany**, Adjunct Professor
- 1994 - 2005 **RWTH Aachen, Germany**, Institute of Hygiene and Environmental Medicine, Senior Research Assistant, Group Leader and Lecturer (5/1995 – 2/1996 and 2–8/1998 on maternity and parental leave, from 1996 part time)
- 1991-1994 **Technical University of Berlin, Germany**, Faculty of Environmental Engineering, PhD student
- 1990 **University of Freiburg, Germany**, Biochemistry Division, Research Assistant

Education

- 2002 **RWTH Aachen, Germany, habilitation** with *Venia legendi* in Environmental Hygiene and Ecological Chemistry, Thesis: "Development of sensitive methods for the environmental and biological monitoring of organic compounds and their metabolites"
- 1994 **Technical University of Berlin, Germany, Doctor in Environmental Engineering**, Thesis: „Microbial degradation of chloro- and methylphenols in mixture under aerobic and denitrifying conditions - regulation and interactions in a mixed culture“, with distinction
- 1990 **University of Freiburg i.Br. Germany, Diploma in Chemistry**, specialization in biochemistry, with distinction
- 1987 **University of Bonn, Germany**, Intermediate examination in chemistry

Scholarships, Awards

- 2017 Second runner-up feature article of the journal *Environmental Science and*

- Technology* for Hollender, Schymanski, Singer, Ferguson; Nontarget Screening with High Resolution Mass Spectrometry in the Environment: Ready to Go?" *Environ. Sci. Technol.* 2017 51, 11505–11512.
- 2010 Best paper award of the journal *Environmental Science and Technology* for Helbling, Hollender, Kohler, Singer, Fenner; High-throughput identification of microbial transformation products of organic micropollutants. *Environ. Sci. Technol.* 44: 6621-6627.
- 2010 Excellence in Review Award of the journal *Environmental Science and Technology*
- 1999 - 2002 Scholarship of the *Deutsche Bundesstiftung Umwelt* (German National Environmental Foundation) for the habilitation
- 1991 - 1992 Scholarship of the Senate of Berlin for the PhD project
- 1991 - 1993 Scholarship of the *Studienstiftung des Deutschen Volkes* (German National Academic Foundation) for the PhD project
- 1991 Adolf-Steinhofer Award of the faculty of Chemistry and Pharmacy of University of Freiburg for the diploma thesis
- 1985 - 1990 Scholarship of the *Studienstiftung des Deutschen Volkes* for graduate studies

Student awards

- 2016 Best oral presentation for Jennifer Schollée and 2nd runner up poster award for Michele Stravs at the NonTarget2016 conference at Ascona, Switzerland
- 2015 ETH medal and Otto Jaag water protection prize for the PhD thesis of Christoph Moschet
- 2015 Award of the Setac GLB for the PhD thesis of Christoph Moschet
- 2014 Best poster award for Michele Stravs at the annual conference of the Swiss Society of Mass Spectrometry (SGMS)
- 2013 Paul Crutzen award of the German Chemical Society, Division Environmental Chemistry and Toxicology for Christoph Moschet for the publication "Multi-Level Approach for the Integrated Assessment of Polar Organic Micropollutants in an International Lake Catchment: The Example of Lake Constance", *Environ. Sci. Technol.* 47: 7028-7036
- 2013 Best poster awards for Jennifer Schollée at the MicroPoll & Ecohazard conference of the IWA
- 2012 ETH medal for the PhD thesis of Andreas Kretschmann
- 2011 Award of the German Chemical Society, Division Environmental Chemistry and Toxicology for the publication for Andreas Kretschmann for the publication "Toxicokinetic Model Describing Bioconcentration and Biotransformation of Diazinon in *Daphnia magna*", *Environ. Sci. Technol.* 45:

4995-5002

- 2009 First prize in a Young Scientist Competition of the international conference Xenowac of the COST action 636 for Lubomira Kovalova for the publication "Challenge of High Polarity and Low Concentrations in Analysis of Polar Cytostatics and Metabolites in Wastewater Samples by Hydrophilic Interaction Chromatography / Tandem Mass Spectrometry", J. Chromatogr. A. 1216: 1100-1108

Membership of scientific societies

- German Chemical Society (GDCh), Division Analytical Chemistry, Environmental Chemistry and Ecotoxicology, Water Chemical Society
- Society of Environmental Toxicology and Chemistry (SETAC)

Membership of scientific research groups and committees

- Member of the research council of the Swiss National Science Foundation, 2014-present
- Member of steering committee of the network of reference laboratories for monitoring of emerging environmental pollutants (NORMAN), 2014 – present, Member of NORMAN working groups prioritization & effect directed analysis since 2009-present, Leader of the cross-working group activity nontarget analysis since 2015
- Management Committee Cost Action 636 "Xenobiotica in the Urban Watercycle", 2006-2009
- Advisory board of the Nireas International Water Research Center, Cyprus, 2012-present
- Strategic advisory group Groundwater Monitoring Switzerland, working group "Parameter", 2007 – present
- Member of project group "Diffuse pollution" of the Swiss Federal Offices for the Environment, 2011-2015
- Polar PAC (polycyclic aromatic compounds) network, 2009 - present
- Scientific board member of the European Marie Curie Early stage training site "AQUAbase", 2004-2007
- Search Committee for implementation of transdisciplinary sustainability research at the University of Lüneburg, Germany, 2009

Review activities

- Guest editor for special issues "Emerging Contaminants" in Journal of Hazard Materials, 2016, 2018
- Editorial board Environmental Toxicology and Chemistry, 2012-2014
- Advisory board Journal „Environmental Sciences Europe“, since 2011
- Associated Editor Journal "Grundwasser", 2010-2017
- Member of the peer review committee of water research institute KWR, the Netherlands, 2014

- Scientific evaluation committee of the Priority program “Biogeochemical Interfaces in Soil” of the German Research Foundation (SPP 1315), 2006 - 2014
- Reviewer for Journals in the field of Environmental Sciences and Analytical Chemistry: e.g. Environ. Sci. Technol., Wat. Res., J. Chromatogr. A, Anal. Bioanal. Chem., Chemosphere, Anal Chem, Environ. Poll., Sci. Tot. Environ., Appl. Microbiol. Biotechnol.
- Reviewer for Research foundations: Deutsche Forschungsgemeinschaft (DFG), Deutsche Bundesstiftung Umwelt (DBU), Deutsches Bundesministerium für Bildung und Forschung (BMBF), Ministère de la Recherche, Luxemburg, National Science Foundation US (NSF), Agence National de la Recherche France (ANR), Swedish Research council for Environment, Agricultural Sciences and Spatial Planning (FORMAS)

Organisation of conferences and workshops

2017	Organization of satellite event “Suspect and Non-target Screening” of the EuCheMS International Conference on Chemistry and the Environment, Oslo, Norway
2016	Main Organizer of the international conference: Non-target screening of organic chemicals for a comprehensive environmental risk assessment - NonTarget2016, Monte Verità, Switzerland
2014	Organisation of Norman Non-target collaborative trial workshop and Non-target screening workshop, Eawag, Dübendorf, Switzerland
2014	Co-chair of the scientific committee of the SETAC Europe conference in Basel, Switzerland
2013	Organisational and scientific committee of the international IWA specialist conference Micropol and Ecohazard 2013, Zurich, Switzerland
2011	Scientific committee of the EuCheMS International Conference on Chemistry and the Environment, Zürich, Switzerland, Organization of satellite event “Non-target analysis”
2011	Scientific committee of the international IWA specialist conference Micropol and Ecohazard 2011, Sydney, Australia
2010	Co-Organizer of the international conference “Environmental transformation of organic compounds: Towards a joint perspective on the importance of transformation products as environmental contaminants – TransCon2010”, Monte Verità, Switzerland
2010, 2016	Scientific committee of the SETAC GLB conference, Dessau and Tübingen, Germany
2004- present	Leader of sessions in environmental chemistry at various SETAC Europe conferences as well as SETAC GLB conferences
2009	Scientific committee and organizing committee of the international conference “Xenobiotics in the Urban Watercycle”, March 2009, Cyprus
2008	Host for workgroup meetings of the Cost action 636 “Xenobiotics in the

	Urban Watercycle”, Dübendorf, Switzerland
2008	Scientific committee of the international conference on the redevelopment of manufactured gas plants (MGP), Dresden, Germany
2007	Scientific committee of the workshop “Emerging contaminants in soil”, organized by the Swiss Federal Offices for Environment, Bern, Switzerland
2006, 2010	Leader and lecturer in the PEAK course (practice-oriented Eawag course) “Chemical environmental analytics: concepts and methods”
2004	Scientific committee and organizing committee of the joint annual meeting of SETAC GLB and GDCh Division Environmental Chemistry and Ecotoxicology, Aachen, Germany
2002	Organisational committee of the workshop “Gender and Science” at the RWTH Aachen, leading of one workshop

Current main research topics

- Fate and behavior of organic contaminants in natural and engineered environments
- Organic trace analytics (identification of transformation products, non-target screening using LC-HRMS)
- Bioaccumulation and biological transformation of organic compounds in aquatic organisms
- Linking of exposure and effects of organic pollutants

List of Publications

163. Oberacher, H., V. Reinstadler, M. Kreidl, M. A. Stravs, J. Hollender³, E. L. Schymanski. 2019. Annotating Non-targeted LC-HRMS/MS Data with Two Complementary Tandem Mass Spectral Libraries, *Metabolites*, accepted
162. Alygizakis, N. A., P. Gago-Ferrero, J. Hollender, N. S. Thomaidis. 2019. Untargeted time-pattern analysis of LC-HRMS data to detect spills and compounds with high fluctuation in influent wastewater. *J. Haz. Mat.* DOI: 10.1016/j.jhazmat.2018.08.073
161. Hollender, J., J. Rothardt, D. Radny, M. Loos, J. Epting, P. Huggenberger, P.I Borer, H. Singer. 2019. Target and Non-target Screening of micropollutants at riverbank filtration sites with short residence times using LC-HRMS/MS, *Wat. Res.* X 1: 100007.
160. Fu, Q, A. Rösch, D. Fedrizzi, c. Vignet, J. Hollender. 2018. Bioaccumulation, Biotransformation, and Synergistic Effects of Binary Fungicide Mixtures in *Hyaella azteca* and *Gammarus pulex*: How Different/Similar are the Two Species? *Environ. Sci. Technol.* 52: 13491-13500.
159. Moeck, C., D. Radny, P. Huggenberger, A. Affolter, A. Auckenthaler, J. Hollender, M. Berg, M. Schirmer. 2018. Verteilung anthropogen eingetragener Stoffe im Grundwasser: Ein Fallbeispiel aus der Nordschweiz. *Grundwasser*, DOI:10.1007/s00767-018-0403-6.
158. Munz, N.A., Q. Fu, C. Stamm, and J. Hollender. 2018. Internal concentrations in gammarids reveal increased risk of organic micropollutants in wastewater-impacted streams. *Environ. Sci.*

- Technol. 52, 10347–10358, DOI:10.1021/acs.est.8b03632.
157. Guenthardt, B. F., J. Hollender, K. Hungerbuehler, M. Scheringer, and T. D. Bucheli 2018. Comprehensive Toxic Plants/Phytotoxins Database and Its Application in Assessing Aquatic Micropollution Potential. *J. Agric. Food Chem.* 66: 7577-7588, DOI: 10.1021/acs.jafc.8b01639
156. Sonavane M., J. E. Schollée, A. Hidas, N. Creusot, F. Brion, M. J-F Suter, J. Hollender, S. Aït-Aïssa. 2018. An integrative approach combining passive sampling, bioassays and effect-directed analysis to assess the impact of wastewater effluent, *Env. Tox. Chem.* 37: 2079-2088, doi: 10.1002/etc.4155
155. Huntscha S., M. Stravs, A. Bühlmann, C. Ahrens, J. Frey, F. Pomati, J. Hollender, I. Buerge, M. Balmer, T. Poiger. 2018. Seasonal dynamics of glyphosate and AMPA in Lake Greifensee: Rapid microbial degradation in the epilimnion during summer. *Environ. Sci. Technol.* 52: 4641–4649.
154. Dulio, V., B. van Bavel, E. Broström-Lundén, J. Harmsen, J. Hollender, M. Schlabach, J. Slobodnik, K. Thomas, J. Koschorreck. 2018. Emerging pollutants in the EU: 10 years of NORMAN in support of environmental policies and regulations, *Env. Sci. Europe* 30:5
153. Neale P. A., W. Brack, S. Aït-Aïssa, W. Busch, J. Hollender, M. Krauss, E. Maillot-Maréchal, N. A. Munz, R. Schlichting, T. Schulze, B. Vogler, B. I. Escher. 2018. Solid-phase extraction as sample preparation of water samples for cell-based and other in vitro bioassays, *Environmental Science: Processes and Impact* 20: 493-504.
152. Alygizakis, N. A., S. Samanipour, J. Hollender, M. Ibáñez, S. Kaserzon, V. Kokkali, J. A. van Leerdam, J. F. Mueller, M. Pijnappels, M. J. Reid, E. L. Schymanski, J. Slobodnik, N. S. Thomaidis, K. V. Thomas. 2018. Exploring the potential of a GLOBAL emerging contaminant early warning network through the use of retrospective suspect screening with high-resolution mass spectrometry, *Environ. Sci. Technol.* 52: 5135-5144, DOI: 10.1021/acs.est.8b00365.
151. Schollée, J. E., M. Bourgin, U. von Gunten, C. S. McArdell, J. Hollender. 2018. Characterizing Non-target Peaks across a Wastewater Treatment Train including Ozonation and Post-Treatment, *Wat. Res.* 142: 267-278.
150. Epting J., P. Huggenberger, D. Radny, F. Hammes, J. Hollender, R. M. Page, S. Weber, D. Bänninger, A. Auckenthaler. 2018. Spatiotemporal scales of river-groundwater interaction - The role of local interaction processes and regional groundwater regimes, *Sci. Tot. Env.* 618:1224-1243. doi: 10.1016/j.scitotenv.2017.09.219.
149. de Zwart D., W. Adams, M. G. Burgos, J. Hollender, M. Junghans, G. Merrington, D. Muir, T. F. Parkerton, K.A.C. De Schamphelaere, G. Whale, R. Williams. 2018. Aquatic exposures of chemical mixtures in urban environments: approaches to impact assessment, *Env. Toxicol. Chem.* 3: 703-714, doi: 10.1002/etc.3975.
148. Hollender, J., E.L. Schymanski, H. Singer, P.L. Ferguson. 2017. Non-target screening with high resolution mass spectrometry in the environment: Ready to go? *Environ. Sci. Technol.* 51: 11505–11512.
147. Chiaia-Hernandez, A.C., A. Keller, D. Wächter, C. Steinlin, L. Camenzuli, J. Hollender, M. Krauss. 2017. Long-term Persistence of Pesticides and TPs in Archived Agricultural Soil Samples and Comparison with Pesticide Application, *Environ. Sci. Technol.* 51: 10642-10651. DOI: 10.1021/acs.est.7b02529
146. Chiaia-Hernandez, A.C., B.F. Günthardt, M. P. Frey, J. Hollender. 2017. Unravelling Contaminants in the Anthropocene Using Statistical Analysis of Liquid Chromatography–High-Resolution Mass Spectrometry Nontarget Screening Data Recorded in Lake Sediments. *Environ. Sci. Technol.* 51,

- 12547–12556, DOI: 10.1021/acs.est.7b03357
145. Tousovaj, Z., P. Oswald, J. Slobodnik, L. Blaha, M. Muz, M. Hu, W. Brack, M. Krauss, C. Di Paolo, T.-B. Seiler, H. Hollert, S. Koprivica, M. Ahel, J. E. Schollée, J. Hollender, M.J.-F. Suter, A.O. Hidasi, K. Schirmer, M. Sonavane, S. Ait-Aïssa, N. Creusot, F. Brion, J. Froment, A. C. Almeida, K. Thomas, K.E. Tollefsen, S. Tufi, X. Ouyang, P. Leonards, M. Lamoree, V. O. Torrens, A. Kolkman, M. Schriks, P. Spirhanzlova, A. Tindall, T. Schulze. 2017. European demonstration program on the effect-based and chemical identification and monitoring of organic pollutants in European surface waters, *Sci. Tot. Env.* 601-602: 1849-1868.
144. Schollée, J.E., E.L. Schymanski, M.A. Stravs, R. Gulde, N. S. Thomaidis, J. Hollender. 2017. Similarity of High-Resolution Tandem Mass Spectrometry Spectra of Structurally Related Micropollutants and Transformation Products *J. Amer. Soc. Mass Spec.* 28:2692-2704, DOI: 10.1007/s13361-017-1797-6.
143. Rösch, A., M. Gottardi, C. Vignet, N. Cedergreen, J. Hollender. 2017. A Mechanistic Understanding of the Synergistic Potential of Azole Fungicides in the Aquatic Invertebrate *Gammarus pulex*, *Environ. Sci. Technol.* 51, 12784–12795, DOI: 10.1021/acs.est.7b03088
142. Bourgin M., E. Borowska, J. Helbing, J. Hollender, H.-P. Kaiser, C. Kienle, C.S. Mc Ardell, E. Simon, U. von Gunten. 2017. Effect of operational and water quality parameters on conventional ozonation and the advanced oxidation process O₃/H₂O₂: Kinetics of micropollutant abatement, transformation product and bromate formation. *Wat. Res.* 122: 234-245.
141. Moeck, C., D. Radny, M. Berg, J. Hollender, M. Schirmer. 2017. Estimating the spatial distribution of artificial groundwater recharge using multiple tracers. *Isotopes in Environmental & Health Studies* 53: 484-499
140. Stravs, M., F. Pomati, J. Hollender. 2017. Exploring micropollutant biotransformation in three freshwater phytoplankton species. *Environmental Science: Processes & Impacts*, 19: 822 - 832 DOI: 10.1039/C7EM00100B.
139. Tlili, A.; J. Hollender, C. Kienle, R. Behra. 2017. Micropollutant-induced tolerance of in situ periphyton: establishing causality in wastewater-impacted streams. *Wat. Res.* 111: 185-194.
138. Schulze, T., M. Ahel, J. Ahlheim, S. Ait-Aïssa, F. Brion, C. Di Paolo, J. Froment, A. O. Hidasi, J. Hollender, H. Hollert, M. Hu, A. Kloß, S. Koprivica, M. Krauss, M. Muz, M. Petre, P. Oswald, J. E. Schollée, T.-B. Seiler, Y. Shao, J. Slobodnik, M. Sonavane, M. J.F. Suter, Z. Tousovaj, K. E. Tollefsen, K.-H. Walz, W. Brack. 2017. Assessment of a novel device for onsite integrative large-volume solid phase extraction of water samples to enable a comprehensive chemical and effect-based analysis, *Sci. Tot. Env.* 581-582: 350-358.
137. Brack, W., V. Dulio, M. Ågerstrand, I. Allan, R. Altenburger, M. Brinkmann, D. Bunke, R. M. Burgess, I. Cousins, B. I. Escher, F. J. Hernández, L. M. Hewitt, K. Hilscherova, J. Hollender, H. Hollert, R. Kase, B. Klauer, C. Lindim, D. López Herráez, C. Miège, J. Munthe, S. O'Toole, L. Posthuma, H. Rüdél, R. Schäfer, M. Sengl, F. Smedes, D. van de Meent, P. J. van den Brink, J. van Gils, A. van Wezel, D. Vethaak, E. Vermeirssen, P. von der Ohe, B. Vrana. 2017. Towards the review of the Water Framework Directive: Recommendations for more efficient assessment and management of chemical contamination in European water resources, *Sci. Tot. Env.* 576:720-737.
136. Neale P., N. A. Munz, S. Ait-Aïssa, R. Altenburger, F. Brion, W. Busch, B. I. Escher, K. Hilscherová, C. Kienle, J. Novák, T.-B. Seiler, Y. Shao, C. Stamm, J. Hollender. 2017. Combination of Chemical Analysis and Bioanalysis to Evaluate the Contribution of Wastewater

- Effluent on the Micropollutant Burden in Small Streams, *Sci. Tot. Env.* 576:785-795.
135. Munz N., F. J. Burdon, D. de Zwart, M. Junghans, L. Melo, M. Reyes, U. Schönenberger, H. Singer, B. Spycher, J. Hollender C. Stamm. 2017. Pesticides drive risk of micropollutants in wastewater-impacted streams during low flow conditions, *Wat. Res.* 110: 366-377.
 134. Rösch, A., S. Anliker, J. Hollender. 2016. How Biotransformation influences Toxicokinetics of Azole Fungicides in the Aquatic Invertebrate *Gammarus pulex*; *Env. Sci. Technol.* 50:7175-7188.
 133. Borowska, E., M. Bourgin, J. Hollender, C. Kienle, C.S. McArdell, U. von Gunten. 2016. Oxidation of cetirizine, fexofenadine and hydrochlorothiazide during ozonation: Kinetics and transformation products. *Wat. Res.* 94, 350-362.
 132. Turko, P., L. Sigg, J. Hollender, P. Spaak. 2016. Rapid evolutionary loss of metal resistance revealed by hatching decades-old eggs. *Evolution* 70: 398–407.
 131. Brack W., S. Ait-Aissa, R. M. Burgess, N. Creusot, C. Di Paolo, B. I. Escher, L. M. Hewitt, K. Hilscherova, J. Hollender, H. Hollert, W. Jonker, J. Kool, M. Lamoree, M. Muschket, S. Neumann, P. Rostkowski, C. Ruttkies, J. Schollee, E. L. Schymanski, T. Schulze, T.-B. Seiler, A. J. Tindall, G. De Aragão Umbuzeiro, B. Vrana, M. Krauss. 2016 Effect-directed analysis supporting monitoring of aquatic environments - An in-depth overview. 2016. *Sci. Tot. Environ* 544: 1073-1118.
 130. Ruttkies C., E. L. Schymanski; S. Wolf; J. Hollender; S. Neumann. 2016. MetFrag Relaunch: Incorporating strategies beyond in silico fragmentation, *J. Cheminformatics* 8:3, DOI 10.1186/s13321-016-0115-9
 129. Stravs M., J. Mechelke P. Ferguson, H. Singer, J. Hollender. 2016. Microvolume trace environmental analysis using peak-focusing online solid phase extraction – nano-liquid chromatography – high resolution mass spectrometry, *Anal. Bioanal. Chem.* 408: 1879-1890.
 128. Bouju, H., P. Nastold, B. Beck, J. Hollender, P. F.-X. Corvini, T. Wintgens. 2016. Elucidation of biotransformation of diclofenac and 4'hydroxydiclofenac during biological wastewater treatment. *J. Haz. Mat.* 301: 443-452.
 127. Schollée, J., E.L. Schymanski, S. Avak, M. Loos, J. Hollender. 2015. Prioritizing Unknown Transformation Products from Biologically-Treated Wastewater using High-Resolution Mass Spectrometry, Multivariate Statistics, and Metabolic Logic, *Anal. Chem.* 87:12121 – 12129.
 126. Gago Ferrero, P., E. Schymanski, A. Bletsou, R. Aalizadeh, J. Hollender, N. Thomaidis. 2015. Extended suspect and non-target strategies to characterize emerging polar organic contaminants in raw wastewater with LC-HRMMS/MS. *Environ. Sci. Technol.* 49: 12333–12341.
 125. Dimitriou-Christidis P., Bonvin A., Samanipour S. Hollender J., Rutler R., Westphale J., Gros, J., Arey S. 2015. GCxGC Quantification of priority and emerging nonpolar organic micropollutants in all types of wastewater streams: analysis methodology, chemical occurrence, and partitioning. *Environ. Sci. Technol.* 49: 7914-25.
 124. Abate-Pella D., D. M. Freund, Y. Ma, Y. Simon-Manso, J. Hollender, C. D. Broeckling, D. V. Huhman; O. V. Krokhin, D. R. Stoll, A. D. Hegeman, T. Kind, O. Fiehn, E. L. Schymanski, J. E. Prenni, L. W. Sumner, P. G. Boswell. 2015. Retention projection enables accurate calculation of liquid chromatographic retention times across labs and methods. *J. Chromatogr. A* 1412: 43-51.
 123. Loos, M., C. Gerber, F. Corona, J. Hollender, H. Singer. 2015. Accelerated isotope fine structure calculation using pruned transition trees. *Anal. Chem.* 87: 5738-5744.
 122. Schymanski, E.L., Singer H. P., Slobodnik J., Ipolyi I.M., Oswald P., Krauss M., Schulze T.,

- Haglund P., Letzel T., Grosse S., Thomaidis N.S., Bletsou A., Zwiener C., Ibáñez. M., Portolés T., de Boer R., Reid M.J., Onghena M., Kunkel U., Schulz W., Guillon A.e, Noyon N., Leroy G., Bados P., Bogialli S., Stipaničev D., Rostkowski P., Hollender J. 2015. Non-target screening with high resolution mass spectrometry: Critical review using a collaborative trial on water analysis. *Anal. Bioanal Chem.* 407: 6237-6255.
121. Altenburger R., S. Ait-Aissa, P. Antczak, T. Backhaus, D. Barceló, T.-B. Seiler, F. Brion, W. Busch, K. Chipman, M. López de Alda, G. de Aragão Umbuzeiro, B. I. Escher, F. Falciani, M. Faust, A. Focks, K. Hilscherova, J. Hollender, H. Hollert, F. Jäger, A. Jahnke, A. Kortenkamp, M. Krauss, G. F. Lemkine, J. Munthe, S. Neumann, E. L. Schymanski, M. Scrimshaw, H. Segner, J. Slobodnik, F. Smedes, S. Kughathas, I. Teodorovic, A. J. Tindall, K. Erik Tollefsen, K.-H. Walzw, T. D. Williams, P. J. Van den Brink, J. van Gils, B. Vrana, X. Zhang, W. Brack. 2015. Future water quality monitoring — Adapting tools to deal with mixtures of pollutants in water resource management. *Sci. Tot. Environ.* 512–513: 540–551.
120. Bletsou A.A., J. Jeon, J. Hollender, E. Archontaki, N. Thomaidis. 2015. Targeted and non-targeted LC mass spectrometric workflows for the identification of transformation products of emerging pollutants in the aquatic environment. *TrAC, Trend in Anal. Chem.* 66: 32-44.
119. Moschet, M., E. L Vermeirssen, R., H. Singer, C. Stamm, J. Hollender. 2015. Evaluation of in-situ calibration of Chemcatcher passive samplers for 322 micropollutants in agricultural and urban affected rivers, *Water Research* 71: 306-317.
118. Möst, M., A.C. Chiaia-Hernandez, M. P. Frey, J. Hollender, P. Spaak. 2015. A mixture of environmental organic contaminants in lake sediments influences hatching from *Daphnia* resting eggs and hatchling survival. *Environ. Chem. Toxicol.* 34: 338–345.
117. Hollender, J., M. Bourgin, K. B. Fenner, P. Longrée, C. S. McArdell, C. Moschet, M. Ruff, E. L. Schymanski, H. P. Singer. 2014. Exploring the Behaviour of Emerging Contaminants in the Water Cycle using the Capabilities of High Resolution Mass Spectrometry, *Chimia* 68: 793–798.
116. Maes, H., S. Maletz, H. Ratte, J. Hollender, A. Schaeffer. 2014. Uptake, elimination and biotransformation of 17alpha-ethinylestradiol by the freshwater alga *Desmodesmus subspicatus*. *Environ. Sci. Technol.* 48: 12354–12361.
- 115 Schirmer, M., J. N. Linde, P. Perona, E.A.D. Mitchell, D.A. Barry, J., J. Hollender, O.A. Cirpka, T. Vogt. 2014. Morphological, hydrological, biogeochemical and ecological changes and challenges in river restoration - the Thur River case study, *Hydrology Earth System Sciences* 18: 2449-2462.
114. Chiaia-Hernandez, A.C., E.L. Schymanski, P. Kumar, H.P. Singer, J. Hollender. 2014. Suspect and Non-target Screening Approaches to Identify Organic Contaminant Records in Lake Sediments. *Anal. Bioanal. Chem.* 28: 7323-7335.
113. Moschet, C., E. L Vermeirssen, R. Seiz, H. Pfeifferli, J. Hollender. 2014. Picogram per liter detections of pyrethroids and organophosphates in surface waters using passive sampling, *Water research* 66: 411-422.
112. Kim, H. Y., Junho Jeon, J. Hollender, S. Yu, and S. D. Kim. 2014. Aqueous and dietary uptake and depuration of antibiotic tetracycline in *D. magna* and its multigenerational transfer, *Journal of Hazardous Materials* 279:428–435.
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Publication in other journals

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 9. Fenner, K., S. Kern, J. Neuwöhner, J. Hollender, H. Singer, M. Schärer, M. Reinhardt, B. Escher. 2011. Transformationsprodukte von organischen Mikroverunreinigungen: Untersuchung von Auftreten und Wirkung im Gewässer, *GWA* 5: 335-345.
 8. Abegglen, C., M. Böhler, J. Hollender, S. Zimmermann, B. Zwickelpflug, Thoney, D., von Gunten, U., H. Siegrist. 2010. Mikroverunreinigungen: Technische Verfahren zur Elimination von organischen Spurenstoffen, *GWA* 7: 587-593.
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Book chapters

13. Schollée, J.E., E. L. Schymanski, J. Hollender. 2016. Statistical approaches for LC-HRMS data to characterize, prioritize, and identify transformation products from water treatment processes. Chapter 4, p. 45-65. In: T. Letzel, J. Drewes (eds.), ACS Symposium Series, Towards harmonized strategies and workflows to assess transformation products of chemicals of emerging concern by non-target and suspect screening, doi: 10.1021/bk-2016-1241.ch004.
12. Gago Ferrero, P., E. Schymanski, J. Hollender, N. Thomaidis. 2016. Chapter 13 - Nontarget Analysis of Environmental Samples Based on Liquid Chromatography Coupled to High Resolution Mass Spectrometry (LC-HRMS), p. 381–403. In: S. Pérez, P. Eichhorn, D. Barceló (eds.) Applications of Time-of-Flight and Orbitrap Mass Spectrometry in Environmental, Food, Doping, and Forensic Analysis, Comprehensive Analytical Chemistry Vol. 71.
11. Kase R., R. I. L. Eggen, M. Junghans, C. Götz, J. Hollender. 2011. Assessment of Micropollutants from Municipal Wastewater- Combination of Exposure and Ecotoxicological Effect Data for Switzerland, p. In: F. S. G. Einschlag (Ed.), Waste Water - Evaluation and Management, InTech, ISBN: 978-953-307-233-3.
10. Hollender, J., H. Singer, D. Hernando, T. Kosjek, E. Heath. 2009. The challenge of the identification and quantification of transformation products in the aquatic environment using high resolution mass spectrometry, p. 195-211. In: D. Kassinos, K. Kümmerer, K. Bester (eds.): Xenobiotics in the Urban Watercycle, Mass Flows, Environmental Processes, Mitigation and Treatment Strategies. Environmental Pollution, Vol. 16, Springer, Netherlands, ISBN 978-90-481-3508-0.
9. Preiss, A., M. Elend, S. Gerling, A.K. Berger-Preiss, A.-K. Reineke, J. Hollender. 2008. Groundwater contaminations - the use of LC-NMR and LC-MS to characterize the scope of polar contaminants, p. 127-138. In: Water Pollution IX, 111, Proceeding of the 9th International Conference on Modelling, Monitoring and Management of Water Pollution, Rico, DP; Brebbia, CA; Esteve, YV (eds.), ISSN 1746-448X.
8. Hollender, J., H. Singer, C.S McArdell. 2008. Polar organic micropollutants in the water cycle, p. 99-112. In: Dangerous pollutants (xenobiotics) in urban water cycle, Proceedings of the NATO Advanced Research Workshop on Dangerous Pollutants (Xenobiotics) in Urban Water Cycle Nato series Springer, Hlavinek P., Bonacci, O., Marsalek, J., Mahrikova, I. (eds.), ISBN 978-1-4020-6800-3.
7. Hollender, J. und W. Dott. 2002. Charakterisierung der Umweltschadstoffe: Anorganische Gase, S. 175-182. In: Lehrbuch der Umweltmedizin, Dott, Merk, Neuser und Osieka (Hrsg), ISBN 3-8047-1816-7.
6. Weber, S., C. Lutermann und J. Hollender. 2002. Charakterisierung der Umweltschadstoffe: Endokrin-wirksame Substanzen, S. 241-250. In: W. Dott, Merk, Neuser und Osieka (Hrsg.), Lehrbuch der Umweltmedizin, ISBN 3-8047-1816-7.
5. Hollender J., H. Färber und H.F. Schöler. 2002. Charakterisierung der Umweltschadstoffe: Aromatische Kohlenwasserstoffe, S. 213-220. In: W. Dott, Merk, Neuser und Osieka (Hrsg.), Lehrbuch der Umweltmedizin, ISBN 3-8047-1816-7.
4. Hollender, J. und W. Dott. 2002. Definition der Umweltmedien, Exposition: Luft, S. 97-108. In: W. Dott, Merk, Neuser und Osieka (Hrsg.), Lehrbuch der Umweltmedizin, ISBN 3-8047-1816-7.
3. Hollender, J. 1994. PhD thesis, Mikrobieller Abbau von Chlor- und Methylphenolen im Gemisch

unter aeroben und denitrifizierenden Bedingungen - Regulation und Interaktion in einer Mischkultur. Veröffentlichungen aus dem Fachgebiet Hygiene der TU Berlin und dem Institut für Hygiene der FU Berlin, ISBN 3 7983 1608 2.

2. Hollender, J., W. Dott, J. Hopp. 1993. Abbau von Chlor- und Methylphenolen durch Misch- und Reinkulturen, S. 19-30. In: O. Hutzinger und H. Fiedler (Hrsg.), Bodenkontamination, Verhalten und ökotoxikologische Wirkung von Umweltchemikalien, Vol. 2, Ecoinforma-Press, Bayreuth.
1. Hopp, J., J. Hollender. 1992. Abbau von Chloraromaten mit Mischkulturen, S. 111-117. In: Biologischer Abbau von Chlorkohlenwasserstoffen, Schriftenreihe Biologische Abwasserreinigung Vol. 1, Technische Universität Berlin, Berlin.

Editorials

3. Mike Duisken: Humaner in vitro und in vivo Cytochrom 450 Metabolismus von Monoterpenen. In: Hollender J. (Ed.): Akademische Edition Umweltforschung. Interdisziplinäre Umwelt-Forums der RWTH Aachen, Shaker Verlag, Aachen, ISBN 3-8322-4866-8.
2. Stefanie Weber: Elimination von natürlichen und synthetischen Steroidhormonen im Abwasserreinigungsprozess – Untersuchungen zur Membranfiltration und zum biologischen Abbau. In: Hollender J. (Ed.): Akademische Edition Umweltforschung. Interdisziplinäre Umwelt-Forums der RWTH Aachen, Shaker Verlag, Aachen, ISBN 3-8322-3237-0.
1. Frank Sandner: Entwicklung von sensitiven chemisch-analytischen Methoden für ein Umwelt- und Biomonitoring von Monoterpenen. In: Hollender J. (Ed.): Akademische Edition Umweltforschung. Interdisziplinäre Umwelt-Forums der RWTH Aachen, Band 26/2003, Shaker Verlag, Aachen, 2003, ISBN 3-8322-2180-8.

Media

Interview in Aqua & Gas 2015, 12: 24-27.

H₂OK? 2014. Interview as feature in The Analytical Scientist 3:31-36.

Own oral presentations

90. Hollender, J. Non-target screening with high resolution mass spectrometry for a comprehensive chemical water quality assessment, Invited presentation at the CHAIN Annual meeting, Eindhoven, The Netherlands, Dec. 3-4, 2018
87. Hollender, J. Linking exposure and effects by studying bioaccumulation and biotransformation of contaminants in aquatic organisms, Invited presentation at the 15th International Symposium on Persistent Toxic Substances, Basel, Switzerland Nov. 6-11, 2018.
86. Hollender, J. The potential of Non-Target screening in environmental monitoring. NORMAN Workshop for regulators - How can non-target screening techniques support environmental monitoring and chemicals management? Oct. 25, 2018.
85. Hollender, J. Abatement options for waste- and drinking water in the River Rhine basin. Presentation at the final conference of the European project SOLUTIONS, Leipzig, Germany, June 19-21, 2018.
84. Hollender, J., J. Schollée, A. Chiaia-Hernandez, E. Schymanski, H. Singer. Non-target screening with high resolution mass spectrometry: Ready to go? Invited presentation at the 14th LC-MS

- conference, Barcelona, Spain, June 26-27, 2018.
83. Hollender, J. Organic micropollutants in Swiss aquatic systems: analysis, assessment and mitigation. Invited seminar at the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, May 23, Beijing, China.
 82. Hollender, J. Organic micropollutants in Swiss aquatic systems: analysis, assessment and mitigation. Invited presentation at the Peking University Advanced Research Workshop on Environment and Health, May 21, Beijing, China.
 81. Hollender, J., J. Schollée, A. Chiaia-Hernandez, E. Schymanski, H. Singer. Non-target screening with high resolution mass spectrometry: Ready to go? Invited presentation at the 4th International Conference on Environmental Pollution and Health, May 18-20, Tianjin, China.
 80. Hollender, J. Exploring the capability of high-resolution mass spectrometry to characterize polar organic contamination in the aquatic environment. Invited seminar at the Mini-Symposium of Environmental Analytical Chemistry at the University of Copenhagen, April 20, 2018.
 79. Hollender, J. Organic micropollutants in aquatic systems: analysis, assessment and mitigation - example Switzerland. Invited presentation at the 50th anniversary of the IDEA, CSIC, Barcelona, December 11, 2017.
 78. Hollender J., N. Munz, F. Burdon, D. de Zwart, B. Escher, P. Neale, H. Singer, C. Stamm Combining chemical analysis, bioanalysis and risk assessment to prioritize risk driving substances in wastewater-impacted streams. Invited speaker at Setac North America Focused Topic Meeting Risk Assessment of Chemical Mixtures, Denver, US, September 6-8, 2017.
 77. Hollender J. Organic micropollutants in Swiss aquatic systems: analysis, assessment and mitigation, Invited seminar speaker at the University of Toronto, Canada, September 5, 2017
 76. Hollender, J., J. Schollée, A. Chiaia-Hernandez, E. Schymanski, H. Singer. Non-target screening with high resolution mass spectrometry: Ready for real-world applications? Invited keynote speaker at the EuCheMS International Conference on Chemistry and the Environment, June 2017, Oslo, Norway
 75. Hollender, J., J. Schollée, M. Bourgin, E. Schymanski, C. McArdell, H. Singer. Strategies to trace organic micropollutants and their transformation products during wastewater treatment processes, invited presentation at 25th International trade fair & conference Analytica, 10-13. May 2016, München, Germany.
 74. Hollender, J. Target, suspect and non-target screening approaches to identify organic contaminant records in lake sediments, invited keynote presentation at the 15th International conference on Environmental Science and Technology, 3.-5. September 2015, Rhode, Greece.
 73. Chiaia-Hernandez, A. C., M. Krauss and J. Hollender. Advantages and challenges of APPI for the analysis of environmental matrices, Norman workshop on the analysis of problematic compounds, Rhode, Greece, 1.-2. September 2015, Rhode Greece.
 72. Hollender, J., A. Chiaia-Hernandez, S. Huntscha, M. Loos, C. Moschet, M. Ruff, J. Schollée, E. Schymanski, H. Singer. Exploring the capability of high-resolution mass spectrometry to characterize polar organic contamination in the aquatic environment, invited keynote presentation at the US-EPA workshop on non-target analysis, North Carolina, August 2015
 71. Hollender, J., Emma L. Schymanski, Heinz P. Singer, Eawag Switzerland; Jaroslav Slobodnik, Ildiko M. Ipolyi, Peter Oswald: Environmental Institute, Slovak Republic; Martin Krauss, Tobias Schulze: UFZ Leipzig, Germany; Peter Haglund: Umeå University; Thomas Letzel, Sylvia Grosse:

- TUM, Germany; Nikolaos S. Thomaidis: University of Athens, Greece; Christian Zwiener, University of Tübingen, Germany. Outcomes of the NORMAN Collaborative Trial on non-target screening of organic substances in river water, invited presentation at the US-EPA workshop on non-target analysis, North Carolina, August 2015.
70. Hollender, J. Biocide monitoring in Swiss surface waters, invited keynote presentation at the Norman workshop on biocide monitoring, Berlin, Germany, 25.-26. June 2015.
 69. Hollender, J. Target, suspect and non-target screening approaches to identify organic contaminant records in lake sediments, invited keynote speaker at the ContaSed conference, Monte Verità, Switzerland, March 2015.
 68. Hollender, J. 100 Pestizide in Fliessgewässern der Schweiz! Eingeladener Vortrag am Berner Wassertag, 5. März 2015.
 67. Hollender, J. Strategies to characterize polar organic contamination in the aquatic environment– Exploring the capability of high-resolution mass spectrometry, Invited keynote speaker at the 5th conference of the European Chemical Society, Istanbul, Turkey, September 2014
 66. Chiaia-Hernandez A., E. Schymanski, H. Singer, J. Hollender. Suspect and Non-target Screening of Lake Sediments: Approaches to Identify Records of Organic Contaminants in a Complex Matrix, Platform presentation at International Mass spectrometry conference, Geneva, Switzerland August 2014.
 65. Hollender J. Prioritisation of chemicals and effects in waste-water effluents for improved mitigation measures, invited presentation at Norman workshop “Methodologies for prioritising hazardous chemicals in European waters: the state of play and the need for improvement”, Paris, June 2014.
 64. Moschet, C. R. Seiz, H. Pfefferli, E. Vermeirssen, J. Hollender. Passive Sampling Method for the Detection of Pyrethroids and Organophosphates in Surface Waters in the Sub-ng/L Range, Platform presentation at Setac Annual Meeting, Basel, Switzerland, May 2014.
 63. Hollender, J., C. Moschet, E. Schymanski, H. Singer. From Target to Non-target Screening: Comprehensive Characterization of the Aquatic Environment using LC-HRMS/MS, invited speaker at 24th International trade fair & conference Analytica , April 2014.
 62. Hollender, J. Strategien für die Charakterisierung von polaren organischen Verbindungen in der aquatischen Umwelt: von «Target» zu «Non-target, invited speaker at Bundesamt für Gewässerschutz, BFG, March 2014.
 61. Fate and behaviour of organic contaminants and their transformation products in the natural and engineered aquatic environment, invited speaker at VERI, Veolia, February, 5, 2014
 60. Hollender, J. Strategies to characterize polar organic contamination in the aquatic environment: exploring the capability of high resolution MS, Invited speaker at the 26th Tandem Mass Spectrometry Workshop Fairmont Chateau Lake Louise, Alberta, Canada December 4-7, 2013
 59. Hollender, J. Langenauer Wasserforum, Verbesserte Apuren = Sauberere Gewässer? Invited keynote presentation, 10.-12. November 2013, Langenau, Deutschland
 58. Hollender, J., Fate of polar micropollutants in conventional and advanced wastewater treatment: from target to non-target LC-HRMS/MS screening, invited keynote presentation at the 13th International conference on Environmental Science and Technology, 5.-7. September 2013, Athens, Greece.
 57. Moschet, C. A. Piazzoli, H. Singer, J. Hollender, Comprehensive Target and Suspect Screening for Insecticides/Fungicides in Surface Waters by Liquid Chromatography High Resolution Mass

- Spectrometry, Setac Annual Meeting, 12.-16. May 2013, Glasgow, Scotland.
56. Hollender, J. Upgrading of wastewater treatment plants in Switzerland to improve surface water quality, invited presentation at the KWR Workshop on pharmaceuticals in the water cycle, 7. December 2012, Utrecht, The Netherlands.
 55. Hollender, J., Case study Switzerland: upgrading of wastewater treatment plants with an advanced treatment step to improve surface water quality, invited presentation at the Workshop "WASTEWATER REUSE APPLICATIONS AND CONTAMINANTS OF EMERGING CONCERN, 12.-13. September 2012, Cyprus.
 54. Hollender, J. From target to non-target screening of micropollutants in the aquatic environment by HPLC combined with high resolution mass spectrometry, invited presentation at the 8th LC/MS/MS WORKSHOP ON ENVIRONMENTAL APPLICATIONS AND FOOD SAFETY, 2.-4. July 2012, Barcelona, Spain.
 53. Hollender, J., E. Schymanski, P. Longrée, M. Loos, C. Ripollés Vidal, M. Ruff, M. Stravs, H. Singer. Using target and non-target LC-MS/MS screening to characterise the presence of known and unknown micropollutants in wastewater, Setac Annual Meeting, 20.-24. May 2012, Berlin, Germany.
 52. Hollender, J., Transformation product (TP) formation and fate in the field: How important are transformation products for the overall exposure? Invited seminar at the University of UMEA, Sweden, 9. February, 2012.
 51. Hollender, J., Organische Mikroverunreinigungen im Wasserkreislauf Eigenschaften, Verbreitungswege, Bedeutung, lecture at the VSA Tagung, November 2011, Emmetten, Switzerland.
 50. Hollender, J. Non-target screening by liquid chromatography coupled to high resolution mass spectrometry - Current Applications and Future Perspectives, introducing lecture at the organized workshop Satellite Event on Non-target Analysis at the ICCE conference, September 2011, Zürich, Switzerland.
 49. Hollender, J. From target to non-target screening of micropollutants in the aquatic environment by HPLC combined with high resolution mass spectrometry, invited lecture at the National Research Centre for Environmental Toxicology, 15. July 2011, Brisbane, Australia.
 48. Hollender, J., F. Dorusch, K. Fenner, D. Helbling, S. Huntscha, S. Kern, M. Krauss, P. Longrée, H. Singer. To what extent does LC-high resolution MS help to detect emerging polar contaminants in the aquatic environment? Micropol & Ecohazard conference 10.-13. July 2011, Sydney, Australia
 47. Hollender, J. From target to non-target screening of micropollutants in the aquatic environment by HPLC combined with high resolution mass spectrometry, invited lecture at the Busan University, 7. July 2011, South Korea.
 46. Hollender, J. From target to non-target screening of micropollutants in the aquatic environment by HPLC combined with high resolution mass spectrometry. Joint Swiss Korean workshop at the Gwangju Institute of Science and Technology, 5. July 2011, South Korea.
 45. Hollender, J. Beurteilung von organischen Mikroverunreinigungen aus kommunalem Abwasser: Priorisierung, Monitoring, Bewertung, invited lecture at the Cercl'eau Tagung „Untersuchung der Fliessgewässer in der Schweiz“, 16. June 2011, Rapperswil, Schweiz.
 44. Huntscha, S., Rodriguez Velosa, D., Hollender, J. Tracing Micropollutants during Riverbank Filtration under Restored and Non-Restored Conditions at the River Thur, Setac Annual Meeting,

15-19 May 2011, Milano, Italy.

43. Hollender, J. Formation and fate of transformation products in aquatic waterbodies: How much do they contribute to the contamination with organic pollutants? invited lecture at the Technical University of Berlin, 24. January 2011, Germany.
42. Hollender, J. Target and Non-target screening of micropollutants and their transformation products in the aquatic environment by high resolution mass spectrometry, invited keynote lecture at the Nato workshop Characterisation of hazardous chemical contamination - from environmental chemistry and toxicology to risk assessment, 23.-26. September 2010, Dubrovnik, Croatia.
41. Hollender, J., Baumgartner, R., K. Fenner, D. Helbling, S. Huntscha S. Kern, P. Longrée, H. Singer. Transformation product (TP) formation and fate in the field: How important are transformation products for the overall exposure? keynote lecture at the international conference TransCon2010, 13.-18. September 2010, Monte Verità, Switzerland.
40. Hollender, J. Identification and quantification of transformation products in the aquatic environment by high resolution mass spectrometry, invited lecture for the working group Environmental monitoring of the German German Chemical Society, 30. June 2010, Frankfurt, Germany.
39. Hollender, J. Polar organic micropollutants in the water cycle, invited lecture at the technical University of Lausanne (EPFL), 15. March 2010, Switzerland.
38. Hollender, J., K. Fenner, S. Kern, P. Longrée, H. Singer. Identification and quantification of transformation products in the aquatic environment by high resolution mass spectrometry. Keynote lecture at the Norman Workshop on Mixtures and Metabolites of Chemicals of Emerging Concern, 19. November 2009, VU University, Amsterdam, The Netherlands.
37. Hollender, J., K. Fenner, S. Kern, H. Singer. High resolution mass spectrometry as a tool to unravel the relevance of transformation products in the environment, EmCon 2009, August 2009, Fort Collins, USA.
36. Hollender, J. Kontinuierliche Entfernung von Spurenstoffen aus Abwasser mit Ozon: Vorstellung einer Pilotstudie und Auswahl biologischer und chemischer Methoden zur Beurteilung der Eliminationseffizienz, invited lecture at the colloquium of the Berlin Centre of Competence for Water, 30. June 2009, Berlin, Germany.
35. Hollender, J. Spurenstoffe eliminieren: Erfolgskontrolle. Eawag Infotag Anthropogene Spurenstoffe im Wasser: Effekte - Risiken - Massnahmen, 23. Juni 2009, Eawag, Dübendorf, Switzerland.
34. Hollender J., E. Gansner, M. Koch, S. Koepke, M. Krauss, C.S. McArdell,, C. Ort, P. H. Singer, U. von Gunten, H. Siegrist, S.G. Zimmermann, B.I. Escher. Elimination of organic micropollutants in a municipal nutrient removal plant upgraded with a full scale post-ozonation followed by sand filtration, International Water Association (IWA) Micropol and Ecohazard, 8.-10. June 2009, San Francisco, CA, USA.
33. Hollender, J. Occurrence and analytics of NSO-heterocyclic compounds in groundwater of contaminated sites - state of the art and open questions. Invited keynote lecture at the workshop "Fate of NSO-heterocyclic PAHs and phenols in the subsurface – analysis, transport and degradation" of the German research foundation, 26.-28.05.2009, Meissen, Germany.
32. Hollender, J., B. Escher, S. Koepke, M. Krauss, C.S. McArdell, Ch. Ort, H. Siegrist, H. Singer, M. Suter, U. von Gunten, S.G. Zimmermann. Elimination of organic micropollutants in a full scale wastewater treatment plant using ozonation, XENOWAC, International Conference on Xenobiotics in the Urban Water Cycle, March 2009, Paphos, Cyprus.

31. Hollender J. Polar organic micropollutants in the aquatic watercycle: occurrence, behaviour, elimination, Invited lecture at the institutional colloquium, University of Applied Sciences Northwestern Switzerland, 12.01.2009, Muttenz, Schweiz.
30. Hollender J. Polare organische Mikroschadstoffe im Wasserkreislauf: Vorkommen, Verhalten, Eliminationsstrategien, Invited lecture at the institutional colloquium, Universität Bayreuth, 06.11.2008, Bayreuth, Germany.
29. Hollender J., M. Krauss. Analysis of nitrosamines in aqueous environmental samples using high resolution LC-MS, Meeting Cost Action 636, October 2008, Novi Sad, Serbia.
28. Hollender, J., B. Escher, S. Koepke, M. Krauss, C.S. McArdell, Ch. Ort, H. Siegrist, H. Singer, M. Suter, U. von Gunten, S.G. Zimmermann. Elimination of organic micropollutants in a full scale wastewater treatment plant using ozonation, Annual meeting of the GDCh Environmental Chemistry and Ecotoxicology Division and SETAC GLB, September 2008, Frankfurt, Germany.
27. Hollender J. Polare organische Mikroschadstoffe im Wasserkreislauf: Vorkommen, Verhalten, Eliminationsstrategien, Invited lecture at the institutional colloquium, Universität Trier, 16.06.2008 Trier, Germany.
26. Reineke A.-K., J. Blotvogel, T.Held, J. Hollender. NSO-heterocyclic compounds in tar oil contaminated groundwater – Does natural attenuation take place? Invited lecture at the International conference on the redevelopment of manufactured gas plants (MGP), 04.-06.03.2008, Dresden, Germany.
25. Hollender J. Identification of micropollutants and their metabolites in environmental water samples using liquid chromatography-linear iontrap-orbitrap hybrid mass spectrometry, Workshop Cost Action 636, September 2007, Santiago de Compostella, Spain.
24. Hollender J., H. Singer, F. Fenner. Opportunities and limits of the combination of linear ion trap with orbitrap technology to detect and identify metabolites in environmental water samples, SGMS annual meeting, October 2006, Beatenberg, Switzerland.
23. Hollender J., H. Singer, F. Fenner. Combination of linear ion trap with orbitrap technology to detect and identify metabolites in environmental samples, Invited lecture at the international workshop Liquid Chromatographie Tandem Mass Spectrometry: Screening and Trace Level Quantitation in Environ. Food Samples. October 2006, Barcelona, Spain
22. Hollender J. Emerging organic contaminants; Water reuse - Eu project RECLAIM, CWQRC-Eawag-CSIRO Workshop, Curtin University, Perth, 24.-2-8.02. 2006, Perth, Australia.
21. Hollender J. 2006. Relevance of metabolites in environmental research, Invited lecture at Kolloquium of the Chemical Faculty, ETH Zürich, January 2006, Zürich, Switzerland
20. Hollender J., A.-K. Reineke, M. Mundt. Fate of NSO heterocycles at contaminated sites – biodegradation or dilution? Eighth International In Situ and On-Site Bioremediation Batelle Symposium, 06-09.06. 2005, Baltimore, USA.
19. Weber, S., S. Khan, J. Hollender. Development of guidelines for chemical contaminants for reclaimed wastewater reuse. Conference "Integrated Concepts in Water Recycling", 14.-17.02.2005, Wollongong, Australia.
18. Reineke A.-K., Mundt, M., J. Hollender, Fate of NSO heterocyclic compounds in the groundwater of tar oil contaminated sites, 15th Annual Meeting of SETAC-Europe, 23.-26.05. 2005, Lille, France.
17. Hollender J., M. Mundt. Fate of NSO heterocyclic compounds in the groundwater of contaminated

- sites – biodegradation or dilution? Setac German Language Branch e.V. GDCh Environmental Chemistry and Ecotoxicology Division, 2nd Joint Annual Meeting, 06.-08.10.2004, Aachen, Germany.
16. Hollender J., S. Weber, W. Dott, S. Khan, E. Huertas, M. Salgot. Risikobewertung von chemischen und mikrobiologischen Qualitätsparametern bei recyceltem Abwasser. GHU-conference 2004, 04.-06.10.2004, Halle, Germany.
 15. Mundt, M., J. Hollender. Relevance of tar oil compounds for the implementation of natural attenuation - Analysis and fate of tar oil compounds and their metabolites in groundwater of contaminated sites, Ecohazards, 14.09.-18.09.2003, Aachen, Germany.
 14. Hollender J., M. Duisken, F. Sandner, B. Blömeke. In vitro und in vivo Untersuchungen zur allergenen Wirkung von Monoterpenen. GDCh-Jahrestagung Chemistry 2003, 06.10. – 10.10.2003, München, Abstract book p. 23, ISBN 3-936028-15-X, Germany.
 13. Hollender J., M. Mundt, G. Rippen. Heterocyclische Aromaten und andere teerölytische Schadstoffe im Grundwasser – Vorkommen, Abbaupotential und Bewertung. 5. Symposium Natural Attenuation, 02. - 03.12.2003, DECHEMA, Frankfurt am Main, Germany.
 12. Hollender J., M. Mundt, K. Althoff and W. Dott. Microbial degradation capacity for PAHs and heterocycles at a former gas plant site. conference GeoProc2002, 04. – 07.03. 2002, Bremen, Germany.
 11. Hollender J., M. Mundt und W. Dott. Teerölbegleitstoffe im Grundwasser: Monitoring und Bestimmung des mikrobiellen Abbaupotentials. Annual meeting of the GDCh Environmental Chemistry and Ecotoxicology Division and SETAC GLB, 06. – 08.10.2002, Braunschweig, Germany.
 10. Hollender J. Mikrobiologische Untersuchungen: Aussagekraft für die Abschätzung von Natural Attenuation Prozessen. Invited lecture at the workshop of the Altlastenforums Sachsen e.V., 09.12.2002, Dresden, Germany.
 9. Hollender J., F. Sandner, B. Blömeke, W. Dott. Ambient and biological monitoring of terpenes, 9th Conf. of the "Gesellschaft für Hygiene und Umweltmedizin" (GHU) and the 5th Conf. of the Int. Soc. of Environmental Medicine (ISEM), 06. – 08.09.2001, Garmisch-Partenkirchen, Germany.
 8. Hollender J., M. Mundt, K. Althoff und W. Dott. Mikrobielle Abbaukapazitäten in Grund- und Sickerwässern für anthropogene organische Schadstoffgemische in Abhängigkeit vom Elektronenakzeptor sowie dem natürlichen Kohlenstoff-, Stickstoff- und Phosphatangebot. 6. colloquium of the DFG Priority Program 546 "Geochemical processes with long-term effects in anthropogenically-affected seepage- and groundwater". 1. - 2.03.2000, Berlin, Germany.
 7. Hollender J., K. Althoff, M. Mundt and W. Dott. Microcosm studies to assess the potential for natural attenuation. ConSoil 2000 FZK/TNO International Conference on Contaminated Soil, 18-22.09.2000, Leipzig, Germany.
 6. Hollender J., K. Althoff, M. Mundt and W. Dott. Eignung von Mikrokosmen-Studien zur Abschätzung des Natural Attenuation Potentials. 2. Symposium Natural Attenuation, – Neue Erkenntnisse, Konflikte, Anwendungen. 07.-08.12.2000, DECHEMA, Frankfurt am Main, Germany.
 5. Hollender J., K. Althoff, M. Mundt und W. Dott. Mikrobielle Abbaukapazitäten in Grund- und Sickerwässern für anthropogene organische Schadstoffgemische in Abhängigkeit vom Elektronenakzeptor sowie dem natürlichen Kohlenstoff-, Stickstoff- und Phosphatangebot. 5. colloquium of the DFG Priority Program 546 "Geochemical processes with long-term effects in

- anthropogenically-affected seepage- and groundwater", 25.-26.03.1999, Bad Herrenalb, Germany.
4. Hollender J., C. Lutermann and W. Dott. New strategies for the improved extraction of PAHs from soils, 9th Annual Meeting of SETAC Europe, 25 – 29.05.99, Leipzig, Germany.
 3. Hollender J., J. Hopp und W. Dott. Vergleich des Abbaupotentials von Misch- und Reinkulturen für Substratgemische in Modellabwasser am Beispiel von Chlor- und Methylphenolen. Workshop der Fachgruppe „Wasser/Abwasser“ der VAAM: Mikrobiologie belasteter aquatischer Ökosysteme, 04. - 05.12.1997, Leipzig, Germany.
 2. Hollender J., C. Lutermann und W. Dott. Mikrobielle Abbaukapazitäten in Grund- und Sickerwässern für anthropogene organische Schadstoffgemische in Abhängigkeit vom Elektronenakzeptor sowie dem natürlichen Kohlenstoff-, Stickstoff- und Phosphatangebot. 3. colloquium of the DFG Priority Program 546 "Geochemical processes with long-term effects in anthropogenically-affected seepage- and groundwater". 19. - 20.02.1997, Göttingen, Germany.
 1. Hollender J. und W. Dott. Abbau von 4-Chlorphenol durch *Comamonas testosteroni* JH5 über den meta- Spaltungsweg. Jahrestagung des VAAM, 16. - 19.03.1997, Hamburg, Germany.

Teaching

Lectures

- “Basics of Environmental Chemistry and Toxicology”, Chemical faculty, ETH Zürich, since FS 2008 each fall semester (together with Kathrin Fenner)
- „Environmental hygiene - for students of the faculties natural science, engineering and medicine“ Part I and II, Medical faculty of the RWTH Aachen, each semester WS 1996 - SS 2005 (together with Wolfgang Dott & Adolf Eisenträger)
- “Environmental chemistry/ environmental analytical chemistry”, lecture and seminar for master students, Natural Science faculty of the RWTH Aachen, WS 2003
- „Chromatographic methods“ lecture for junior scientists of the Interdisciplinary center of clinical research of the RWTH Aachen, one day block course, WS 1996
- Organisation and participation in the lecture series „Interdisciplinary strategies for environmental protection“ for the graduate college AGEESA, SS 2003 - SS 2005

Seminars and excursions

- Term paper course: training of critical evaluation of research subjects and summarization of research subjects in a scientific paper, Master Environmental Sciences, ETH, since FS 2007 several times tutor of a student
- Seminar to the lecture „Environmental hygiene - for students of the faculties natural science, engineering and medicine“, Part I and II, Medical faculty of the RWTH Aachen, since WS 1996 – 2005 (together with Wolfgang Dott & Adolf Eisenträger)
- Seminar to the „Ecological course, branch hygiene, environmental and industrial medicine“, Medical faculty of the RWTH Aachen, block course at 3 days, WS 1994
- Excursions to „Ecological course, branch hygiene and environmental medicine“, and the lecture „Environmental hygiene - for students of the faculties natural science, engineering and medicine“, Medical faculty of the RWTH Aachen, 2 times per semester, WS 1996- 1998
- Organisation of the joint institute colloquium of the Institute of Industrial Medicine and the Institute of Hygiene and Environmental Medicine, SS 2003 and WS 2003

Practical courses

- Master Course “Analysis of organic pollutants”, Environmental Sciences, ETH Zürich, since 2007 each spring semester, main responsible person, together with PhD students of the department Environmental Chemistry
- Bachelor Course “Systemanalyse”, Environmental Sciences, ETH Zürich, 2008-2014, each spring semester, responsible for chemical part, together with PhD students of Eawag
- Block course to „Ecological course, branch hygiene and environmental medicine“, Medical faculty of the RWTH Aachen, WS 1994 – 1998 and WS 2003 - 2005
- Block course „Environmental hygiene - microbial, chemical and toxicological methods“

for students of the faculties natural science, engineering and medicine, Medical faculty of the RWTH Aachen, WS 1996 – 2005, responsible for specific experiments

Supervision of diploma, master and PhD students

Diploma and master theses

- About 30 bachelor and master theses of environmental scientists and chemists at the ETH Zürich, since 2006.
- About 20 diploma theses of chemists, biologists and geologists as well as magister theses of the additional study course “Environmental Sciences” at the Institute of Hygiene and Environmental Medicine of the RWTH Aachen, 1994 - 2005
- 3 Diploma theses of chemists, biologists and environmental engineers at the department of Hygiene of the TU Berlin, 1991-1994

Supervised PhD theses

25. Isolating Anthropogenic Signals in Groundwater with High Resolution Mass Spectrometry by Eliminating Natural Organic Matter, Karin Kiefer (in progress), ETH Zürich
24. Tracing biotransformation in the hyporheic zone with the use of passive sampling and high resolution mass spectrometry, Jonas Mechelke (in progress), ETH Zürich
23. Risk assessment of micropollutants in wastewater-impacted streams: combining chemical exposure, biological effects and bioaccumulation, Nicole Munz (2018), ETH Zürich.
22. The role of biotransformation on the toxicokinetics of fungicides in aquatic invertebrates Andrea Rösch (2017), ETH Zürich.
21. On Biotransformation of polar organic micropollutants in phytoplankton, Michael Stravs (2017), ETH Zürich.
20. Development of a difference analysis for LC-MS/MS data to identify polar transformation products along chains of water treatment processes, Jennifer Schollée (2016), ETH Zürich.
19. Mining of High-Resolution mass Spectrometry Data to monitor organic pollutant dynamics in aquatic systems, Martin Loos (2015), ETH Zürich (together with H. Singer).
18. Addressing blind spots in the assessment of pesticides in surface waters: A complete screening using trace-level mass spectrometry techniques and complementary sampling strategies, Christoph Moschet (2014), ETH Zürich.
17. Temporal records of organic contaminants in lake sediments, their bioconcentration and effect on *Daphnia* resting eggs, Aurea Chiaia-Hernandez (2013), ETH Zürich.
16. Fate of polar organic micropollutants during riverbank filtration: Insights from complementary analytical techniques, Sebastian Huntscha (2013), ETH Zürich.
15. Nonextractable residues of sulfonamide antimicrobials in soil – formation mechanisms with organic matter and stability, Anna Gulkowska (2011), ETH Zürich (together with Dr.

R. Schwarzenbach and Dr. M. Krauss).

14. Transformation products of organic micropollutants: development and evaluation of methods for assessing their exposure in the aquatic environment, Susanne Kern (2010), ETH Zürich (together with Prof. R. Schwarzenbach and Dr. K. Fenner).
13. Toxicity of diazinon in *Daphnia magna* - a mechanistic effect model based on time-resolved quantification of bioconcentration, biotransformation, and enzyme inhibition, Andreas Kretschmann (2010), ETH Zürich (together with Prof. Dr. B. Escher).
12. Bioavailability of sulfonamide antimicrobials in soil - dominant sorption mechanisms and effect-based reaction in bacteria, Merle Richter (2009), ETH Zürich (together with Prof. R. Schwarzenbach).
11. Cyclostatics in the aquatic environment: analysis, occurrence, and possibilities for removal, Lubomira Kovalova (2009), RWTH Aachen.
10. Heterocyclic compounds in tar oil contaminated groundwater - occurrence, fate and indications for natural attenuation, Anne-Kirsten Reineke (2008) RWTH Aachen.
9. Characterisation of the fouling processes of membranes in the wastewater treatment process, Djamila Al-Halbouni (2008) RWTH Aachen.
8. Metabolism of natural and synthetic steroid hormones under anaerobic conditions, Michael Fahrback (2006) RWTH Aachen.
7. Chemical analytical investigations of the allergenic potential of terpenes, Mike Duisken (2005) RWTH Aachen.
6. Elimination of natural and synthetic steroid hormones in the sewage treatment process - investigation of the membrane filtration and the biological degradation, Stefanie Weber (2004) RWTH Aachen.
5. Development of sensitive chemical analytical methods for the environmental and biological monitoring of monoterpenes, Frank Sandner (2003) RWTH Aachen.
4. Genotoxicity testing of solid biomaterials - optimization of biological methods by use of reference materials, Boris Müller (2002) RWTH Aachen (together with Prof. Dr. W. Dott).
3. Development of laboratory methods for the prediction of the microbial potential of contaminated groundwater and soil samples, Katrin Althoff (2002) RWTH Aachen (together with Prof. Dr. W. Dott).
2. Supercritical fluid extraction of PAH contaminated soils with modifiers and derivatizing reagents for the detection of analyte-matrix-interactions, Christoph Lutermann (1999) RWTH Aachen (together with Prof. Dr. W. Dott).
1. Dynamic of the phosphate and carbon storage during the biological phosphate elimination in a continuous fermenter with internal biomass retention, Liane Kornberger (1999) RWTH Aachen (together with Prof. Dr. W. Dott).

External reviewer of the following PhD theses

- Abha Parajulee, University of Toronto, Canada, 2017
- Richard T.D.N. Bade, University of Jaume, Spain, 2016

- Ulrike Olofssen, Umea University, Sweden, 2012
- Lian Yu, RWTH Aachen, Germany, 2011
- Arne Hein, TU Berlin, Germany, 2010
- Thomas Preuss, RWTH Aachen, Germany, 2007
- Ralf Vinken, RWTH Aachen, Germany, 2005

Research Grants

- Bioakkumulation von ionischen Stoffen im Rahmen der Umweltrisikobewertung, 2018-2020, together with Kristin Schirmer, FOEN Switzerland (220'000 CHF)
- Nationale Grundwasserbeobachtung NAQUA: Pilotstudie Non-target Screening, 2018-2020, together with Heinz Singer, FOEN Switzerland (210'000)
- Target und Non-target-Screening von organischen Spurenstoffen inklusiv Pflanzenschutzmittelabbauprodukte in Schweizer Grundwässern, 2017, together with Heinz Singer, FOEN Switzerland (100'000 CHF)
- Investigations on the bioconcentration of xenobiotics in the freshwater amphipod *Hyaella azteca* and inter-laboratory comparison of a new BCF test protocol. 2017-2018, together with Christian Schlechtriem, Fraunhofer IME und Kai-Uwe Goss, UFZ, The European Chemical Industry Council (30'000 € for Eawag).
- Evaluation von Verfahren zur Entfernung von Mikroverunreinigungen aus dem Abwasser mittels suspect und non-target screening - Ozon, Aktivkohle und Kombiverfahren, FOEN Switzerland , together with Christa McArdell (430'000 CHF)
- Bioaccumulation and biotransformation of organic xenobiotics in aquatic organisms, 2016-2019, SNF, (600'000 CHF)
- European initial training network hypoTRAIN, A training network for enhancing the understanding of complex physical, chemical and biological process interactions in hyporheic zones for 3 PhD students, together with Mario Schirmer and Rolf Kipfer, 2015-2018
- Statistische Analyse von HPLC-HRMS-Daten für die umfassendere Charakterisierung der Ozonung und nachfolgenden biologischen Nachbehandlungen, 2015-2016, FOEN Switzerland (87'000 CHF)
- Früherkennung von organischen Schadstoffen in der Umwelt (FROSCH), (together with T. Bucheli, Agroscope and M. Scheringer, ETH Zurich) 2015-2018, (130'000 CHF)
- EU project Solutions - Solutions for present and future emerging pollutants in land and water resources management“ workpackage leader case study Rhine – link to Ecolmpact, 1 PhD student, 10 months postdoc, start in October 2013 – Sep 2018, (290,000€)
- Marie Curie ContaminantID – Integrated Computational Techniques for Non-Target Screening of Environmental Contaminants using High Resolution Mass Spectrometry for postdoc Emma Schymanski, (174,000 €)
- European initial training network EDA-EMERGE Innovative biodiagnosis meets chemical structure elucidation- novel tools in effect directed analysis to support the identification

and monitoring of emerging toxicants on a European scale, for two PhD students, together with Kristin Schirmer, 2011-2015

- EU project DEMEAU Demonstration of promising technologies to address emerging pollutants in water and waste water, together with Christa McArdell, Urs von Gunten and Hansruedi Siegrist, 1 postdoc, 2012-2015, (440,000 €)
- SNF project “Metabolism of polar organic xenobiotics in aquatic invertebrates: importance and contribution to environmental fate, together with Francesco Pomati, 2 PhD students, 2013-2015 (375,000 CHF)
- Regionale Wasserversorgung Basel-Landschaft 21, Basel Land project: Leader of chemical investigation module, 2013-2016, 1 postdoc
- Bafu project “Suspect screening of sediments” 2012-2013, FOEN Switzerland (80'000 CHF)
- Investigations on the exposure situation of Swiss waterbodies with insecticides and fungicides, together with H. Singer and C. Stamm, 4/2011-10/2014, FOEN Switzerland, 1 PhD student (230'000 CHF)
- NFP 65 project “Biotransformation of fullerenes and carbon nanotubes” (BioCarb), 2011-2013, together with PI Hans-Peter Kohler, 1 postdoc
- Exposition von Valsartan und seinen Transformationsprodukte, together with H. Singer and Dr. K. Fenner, 2010, Novartis International AG, (40,000 CHF)
- The fate and toxicity of antibiotics and their transformation products in aquatic environment, ETH Strategic Korean-Swiss Cooperative Program, together with Prof. Dr. Sang Don Kim, Gwangju Institute of Science and Technology, 2011 (18,000 CHF)
- Investigations on the exposure situation of Swiss waterbodies with insecticides and fungicides, 2011-2014, FOEN Switzerland (245,000 CHF)
- Tantalos, Survey of polar organic micropollutants at the international Rhine station in Basel, together with PI H. Singer, 2009-2012, FOEN Switzerland, (~392,000 CHF)
- Application of powdered activated carbon for elimination of micropollutants from the wastewater, together with PI Prof. Dr. H. Siegrist, 2008-2010, FOEN Switzerland, (Uchem part 80,000 CHF)
- Sino Swiss Science and Technology Cooperation exchange grant “Development of a passive sampler based on ionic liquids for PFCs in water: sampler design and post-treatment method after sampling” for Dr. Lei Wang of the Nankai University, Tianji, Swiss State Secretariat for Education and Research 2010 (12,600 CHF)
- The impact of abiotic factors on hybrid Daphnia populations across the Alps: are pollution effects irreversible? together with PI Dr. P. Spaak, 2009-2011, SNF (~300,000 CHF).
- Development of Passive Sampling for Water Quality Assessment and for Simulating the Bioconcentration in Aquatic Organism Under Pulsed Exposure Conditions, 2009-2010, SNF (~376,000 CHF).
- Experimental evaluation and further development of a computer-based biodegradation pathway prediction system for chemical pollutants, together with PI Dr. K. Fenner and Dr.

H.-P. Kohler, Eawag, 2008-2010, Eawag, (~182,000 CHF).

- Influence of the river revitalisation on the behaviour of organic micropollutants in the Thur valley within CCES project Record, 2008-2012, FOEN Switzerland, (~350,000 CHF).
- EvoChemTox, Does microevolution due to chemical contaminants, influence the biodiversity of Greifensee? together with PI Dr. P. Spaak, Eawag, 2007-2009 (~30,000 CHF).
- Combined KoMet “Combined modeling and measurement approach for the identification of relevant transformation products in water resources“, together with PI Dr. K. Fenner, Eawag/ETH and Prof. Beate Escher, 2006- 2009, Foen Switzerland, (~550,000 CHF).
- Screening organic pollutants in surface and ground water using HRLC-MS, together with H. Singer, Eawag, Uchem, 2006-2008, FOEN Switzerland, (~130,000 CHF).
- Formation of Nonextractable Residues of Sulfonamides with Soil Organic Matter- Mechanisms and Detection by High Resolution Tandem Mass Spectrometry, SNF (together with Dr. M. Krauss, Eawag, Uchem), 2007-2011, SNF (~215,000 CHF).
- Anaerobic degradation of steroid hormones by novel denitrifying bacteria, SNF, together with PI Dr. H.-P. Kohler, Umik, Eawag, 2007-2008, SNF(~131,000 CHF).
- Strategy MicroPoll, Module control of success, Module pilot experiment, Module Swiss national material flux model, evaluation concept micropollutants, FOEN Switzerland, 2006 - 2010, (~455,000 CHF).
- Integration of internal metabolites in the effect modeling of insecticides in Daphnia Magna, together with Prof. Dr. B. Escher, Eawag, Utox, Eawag, 2006-2010, (~190,000 CHF).
- Analysis of organic compounds and specific studies on removal and fate of organic compounds within the EU project Reclaim “Water reclamation technologies for safe artificial groundwater recharge“, 2005-2008, (~130,000 €).
- ITN AQUABASE “Organic micropollutants in the aquatic environment - interdisciplinary concepts for assessment and removal” of the 6. framework of the EU, initiated together with the Biology, Chemical Engineering and Civil Engineering of the RWTH Aachen, 2004 – 2008, (~150,000 €).
- Heterocyclic aromatic compounds and other tar oil typical contaminants in groundwater - identification, quantification and metabolism, BMBF (German Federal Ministry of Education and Research) project in program “KORA“, 2003-2007, (~221,000 €).
- Definition of key objectives for water reuse concepts, project within the EU project Aquarec „Integrated Concepts for Reuse of Upgraded Wastewater“, 2003-2005, (~117,000 €).
- Strategies concerning fouling control of membrane bioreactors in the sewage treatment process, project together with the Institute of Chemical Engineering and Civil Engineering of the RWTH Aachen, supported by the Ministry of the Environment and Conservation, Agriculture and Consumer Protection of the German State of North Rhine-Westphalia, 2004-2007, (~132,000 €).

- Chemical and biological investigations of the allergenic potential of terpenes, terpene metabolites and terpene oxidation products, DFG (German research foundation) project, (together with Prof. Dr. B. Blömeke, University of Trier), 2002 – 2005, (~146,000 €).
- Metabolism of selected steroid hormones in activated sludge under different redox conditions, project within the DFG graduate college AGEESA, 2002–2005, (~50,000 €).
- Soil and groundwater protection at the airport München and affected area around the airport, project supported by the industry, together with Prof. Dr. W. Dott, 2000 – 2002, (~179,000 €).
- Investigation of the elimination of natural and synthetic contraceptives in sewage treatment plants with membrane filtration, project within the DFG graduate college AGEESA, 1999 –2002, (~50,000 €).
- Microbial degradation potential in groundwater depending on electron acceptor as well on natural carbon, nitrogen and phosphorous supply, project in the DFG priority program “Geochemical processes with long-term effects in anthropogenically-affected seepage- and groundwater“, together with Prof. Dr. W. Dott, 1997 – 2002, (~187,000 €).
- Investigation of genotoxic properties of solid biomaterials by chemical and biological methods, BMBF project in the interdisciplinary clinical research center „Biomat“ of the medical faculty of the RWTH Aachen, 1998 –2001, (~100,000 €).
- Transmission of genotoxic properties of solid materials (biomaterials) to fluid in vitro-test systems for the investigation of genotoxic effects, BMBF project in the clinical research center „Biomat“ of the medical faculty of the RWTH Aachen, 1998–1999, (~120,000 €).
- Regulation of the co-metabolic degradation of chlorinated and methylated phenols by mixed and pure cultures, DFG, together with Prof. Dr. W. Dott, 1995 – 1996, (~227,000 €).
- Biochemical and biomolecular investigations of the biological phosphate elimination in wastewater treatment plants, DFG, together with Prof. Dr. W. Dott, 1995 –1998, (~283,000 €).