

CURRICULUM VITAE

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Nationality: Swiss



AREAS OF EXPERTISE

- Input and fate of organic contaminants from different urban sources, including hospitals and industries, in the aquatic environment.
- Wastewater treatment processes and strategies for the removal of organic micropollutants in conventional and advanced treatment with ozone and activated carbon; formation and fate of ozonation transformation products.
- Development of analytical techniques for the determination of organic pollutants and transformation products with LC-(HR)MS/MS in sewage and ambient waters.

EDUCATION

- 1990-1994 SWISS FEDERAL INSTITUTE OF TECHNOLOGY (ETH) ZURICH.
PhD Sc. Nat.: Transport of nonlinearly sorbing chemicals in chromatographic columns; adsorption on cristobalite.
Supervisors: Prof. H. Sticher, Prof. M. Borkovec, Dr. P. Behra
- 1988-1992 ETH ZURICH, DEPT. OF SOCIAL SCIENCES AND HUMANITIES AND DEPT. OF CHEMISTRY.
High school teaching certificate in Chemistry (Höheres Lehramt)
Course work: mechanics and psychology of teaching, training of teaching chemistry.
- 1985-1990 ETH ZURICH, INSTITUTE OF TECHNICAL CHEMISTRY.
Diploma in Chemistry. Organic chemistry, polymer chemistry, dye chemistry, environmental chemistry.
Diploma Thesis: Synthesis of a β -sulfatoethylsulfon reactive dye and FTIR spectroscopy studies of the binding to cellulose.
Advisors: Prof. P. Rys and Dr. U. Meyer.

EMPLOYMENT

- 1996-today EAWAG, DEPARTMENT OF ENVIRONMENTAL CHEMISTRY, DÜBENDORF.
Group Leader and Senior Scientist
- 2001-2005 EAWAG, DUEBENDORF AND SWISS NATIONAL SCIENCE FOUNDATION (SNF), BERN.
Associate with research counselors Prof. R. Schwarzenbach and Prof. B. Wehrli for evaluating SNF-proposals in the field of natural sciences.
- 1994-1996 THE JOHNS HOPKINS UNIVERSITY, DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL ENGINEERING, BALTIMORE, USA.
Postdoctoral Research Associate (with Prof. A. T. Stone)

TEACHING ACTIVITIES

- 2021- ETH ZURICH, DEPARTMENT OF CHEMISTRY AND APPLIED BIOSCIENCES.
Lecturer: environmental chemistry and ecotoxicology "Grundlagen der Umweltchemie und der Ökotoxikologie".
- 2000-2001 ETH ZURICH, DEPARTMENT OF CIVIL, ENVIRONMENTAL AND GEOMATIC ENGINEERING.
Lecturer: developed and coordinated a new laboratory course "laboratory for environmental engineers".
- 1997-2000 ETH ZURICH, DEPARTMENT OF ENVIRONMENTAL SCIENCES.
Lecturer: analytical environmental chemistry.
Laboratory Course Coordinator: laboratory course in environmental chemistry.
- 1989-1992 MINERVA, ZURICH, AND KANTONSSCHULE RYCHENBERG, WINTERTHUR.
Lecturer: high school level organic and inorganic chemistry.

RESEARCH PROJECTS

- 2021-2022 Project "Understanding the impacts of antibiotics from human excreta derived fertilizers on the soil-microbial-plant nexus". Collaboration within SNF PRIMA grant of Gina Garland, ETHZ.
- 2020-2022 Industrial Project "Survey of antibiotic resistance determinants in the ProReno Industrial WWTP Basel". With H. Bürgmann.
- 2021 Project ProReno, Holinger AG "Production and optimization of a sustainable powdered activated carbon with IWB». Collaboration with M. Böhler.
- 2021 Projekt WWTP Barbengo, TBF and Partner AG "DynaPAC – PAC dosing to a sand filter» Collaboration with M. Böhler.
- 2020-2021 SNF project "COWWID-19: Surveillance of SARS-CoV-2 in Wastewater". With C. Ort.
- 2018-2021 SRP-72 project "Antibiotic Resistance from WWTPs in Swiss streams and rivers (Resistom)". With H. Bürgmann.
- 2017-2020 FOEN projects "EMPYRION I and II, pyrolysis of sewage sludge". With T. Bucheli, Agroscope.
- 2017-2020 FOEN project "Characterization of wastewater treatment with suspect und non-target screening for the evaluation of ozonation and activated carbon treatment (SCREEN-O3TP)".
- 2017-2020 Eawag DF and Wasserversorgung Zürich (WVZ) project "Formation and fate of transformation products in water treatment with ozone and biological post-treatment (TRANSFO3RM)".
- 2016-2020 AVG/FOEN project "Pilot scale advanced treatment of wastewater with granular activated carbon (GAC) and combined with ozonation (O3/GAC) at WWTP Glarnerland".
- 2015-2019 Eawag project "Elucidation of ozonation transformation products of N-containing compounds". With U. von Gunten.
- 2015-2016 Eawag DF project "Understanding resistance gene flow during passage of ww treatment (RESIST-Flow)". With H. Bürgmann.
- 2015-2016 Eawag DF project "Post-treatment of urine with GAC (VUNA 2.0)". With K. Udert.
- 2014-2016 VSA/FOEN project "wastewater treatment with GAC and ozone/GAC at WWTP Bülach". With A. Joss.
- 2013-2014 Sciex fellowship project "Fate of organic micropollutants in advanced treatment of wastewater with ozone (MICROZO)".
- 2014-2015 Swiss FOEN-UTF-project "Biological post-treatment after ozonation at WWTP Neugut (ReTREAT)". With M. Böhler.
- 2012-2015 EU Project "Demonstration of promising technologies to address emerging pollutants in water and wastewater (DEMEAU)".
- 2010-2014 Bill & Melinda Gates Foundation project "Nutrient harvesting in South Africa (VUNA)". With K. Udert.
- 2007-2012 InterReg IVB project "Pharmaceutical Input and Elimination from Local Sources (PILLS)".
- 2007-2010 National project "Input and Elimination of Pharmaceuticals and Disinfectants from Hospital Wastewater". Funded by Swiss State Secretariat for Education and Research (SER)/COST, FOEN, cantons.
- 2006-2009 EU project "Concepts and Processes for Optimization and Upgrading Municipal Wastewater and Sludge Treatment (NEPTUNE)".
- 2006-2010 FOEN-project "Strategies to reduce micropollutants in the environment (Mikropoll II)".
- 2005-2008 EU project "Water reclamation technologies for safe artificial groundwater recharge (RECLAIM WATER)".
- 2001-2006 SRP-49 project "Occurrence of Human-use Antibiotics and Antibiotic Resistance in the Aquatic Environment (HUMABRA)". With W. Giger.
- 2000-2006 Eawag project "Combining Urban Water Management, Nutrient Recycling and Modern Farming (NOVAQUATIS)". With T. Larsen.
- 2000-2004 EU project "Assessment of Technologies for the Removal of Pharmaceuticals and Personal Care Products in Sewage and Drinking Water Facilities to Improve the Indirect Water Reuse (POSEIDON)".

MEMBERSHIP in panels, boards, reviewing activities etc.

- Since 2015 *Board Member of IWA Specialized Group* "Assessment and Control of Hazardous Substances in water".
- Since 2015 *Member of NORMAN* (network of reference laboratories for monitoring of emerging environmental pollutants), especially in Working Group 5: Wastewater Reuse and Contaminants of Emerging Concern.
- Since 2013 *Proposal reviewer for 5 projects*: DFG (2019), Czech Science Foundation research proposal (2016), Israeli Ministry of Science, Technology and Space, research proposal (2016), IUPAC grant (2015), CRD grant application at Natural Science and Engineering Research Council (NSERC) of Canada (2013).

- Since 2013 *Member of PhD committee (external expert) for 7 thesis:* Robin Wunsch (FHNW and EPFL Lausanne, 2021), Rui Li (Aarhus University, Denmark, 2021), L. Paredes Barro (USC, Spain, 2018), K. Tang (DTU, Denmark, 2018), A. Doreen Rodayan (McGill, Canada, 2014), S. Coutu (EPFL, Lausanne, 2013), D. Manh Cuong (GIST, Korea, 2013).
- Since 2012 *Expert Consultant for projects related to hospital wastewater:* Strategy hospital Baden with cantonal authority Aarau (2017), BMBF project sauber+ "Innovative Konzepte und Technologien für die separate Behandlung von Abwasser aus Einrichtungen des Gesundheitswesens" (2012-2015).
- 2021-2022 *Expert consultant STOWA project "oxidation techniques for micropollutant removal from wastewater".* Arnoud de Wilt, Royal Faskoning DHV, NL.
- 2020-2022 *Expert consultant for JRC on "Identification of a representative list of chemicals in wastewater".*
- 2020 *Guest Editor for special issue in Water Research.*
- 1.4.2019 *Expert Consultant in VSA Workshop „Continuation of VSA recommendation to evaluate applicability of ozonaton“.*
- 6.3.2019 *Expert Consultant at Norman / AQUAlity workshop to prepare a Joint NORMAN and Water Europe Position Paper on "Contaminants of Emerging Concern in Urban Wastewater", Paris, France.*
- 2014-2018 *Member of Management Committee in COST Action ES1403 "Emerging challenges and opportunities in wastewater reuse (NEREUS)".*
- 2011-2015 *Member of Advisory Board for InterReg IVB Project noPILLS "no pills in waters".*
- 2009-2012 *Member of Management Committee in COST Action TD0803 "Detecting evolutionary hot spots of antibiotic resistances in Europe (DARE)".*
- 2006-2013 *Member of working group "Micropollutants" in CIPEL "Commission Internationale pour la protection des eaux du Léman".*
- 2006-2010 *Leader of Swiss working group "Hospital wastewater treatment".*
- 2006-2009 *Member of COST Action 636 "Xenobiotics in the Urban Cycle".*
- 2004-2005 *Member of Swiss working group "Organic trace contaminants in the groundwater of the Limmat River valley", AWEL, Switzerland.*
- 2004 *Member of Canadian working group "Technical Workshop for Pharmaceuticals and Personal Care Products in the Environment". Health Canada. Niagara-on-the-Lake, Ontario, Canada, 28.-30.3.2004.*
- 1999-2003 *Member of Swiss working group "Veterinary pharmaceuticals in the environment".*
- Since 2000 *Memberships of American Chemical Society (ACS), since 2002: Society of Environmental Toxicology and Chemistry (SETAC), since 2015: International Water Association (IWA).*
- Since 1996 *Reviewer for 18 scientific journals, predominantly Water Research, Environmental Science and Technology, Science of the Total Environment, Environmental Pollution, Environmental Science: Water Research & Technology, Chemosphere, Water Science and Technology etc.*

ORGANISATION of CONFERENCES

- Since 2011 *Member of Scientific Committee for 7 international conferences:* 11th Micropol & Ecohazard Conference, Seoul, Korea (Oct. 2019), XENOWAC II conference, Limassol, Cyprus (Oct. 2018), IWA conference MicroPol&Ecohazard, Vienna, Austria (Sept. 2017), SETAC GLB conference, Zurich, Switzerland (Sept. 2015), IWA conference MicroPol&Ecohazard, Zurich, Switzerland (June 2013), AWRA Specialty Conference: Contaminants of Emerging Concern in Water Resources, Denver, USA (June 2012), 13th EuCheMS International Conference on Chemistry and the Environment, Zürich, Switzerland (Sept. 2011).
- 25.10.2021 *Co-Organizer of VSA/Eawag workshop "Operation of advanced treatment to abate micropollutants during rain events».*
- 22/23.6.2021 *Co-Organizer of PEAK-VSA course V51/21 "Activated Carbon to elimination micropollutants - Aktivkohle zur Spurenstoffelimination – Process variants of GAC and PAC“.*
- 9.12.2019 *Co-Organizer of Eawag/VSA workshop "Planning and design of discontinuously flushed GAC filters“.*

SUPERVISION

- 8 PostDocs: *I. Nybom, T. Manasfi, R. Gulde, J. Schollée, M. Bourgin, K. Kuroda, L. Kovalova, H. Kuch*
- 4 PhD students: *A. Heusser, S. Eun Lim, E. Borowska, A. Göbel (awarded with the Otto-Jaag-Gewässerschutzpreis, 2005).*
- 19 Scientific Assistants (with MS degree or higher): *S. Wullschleger, E. Anthamatten, B. Clerc, C. Oltramare, M. Rutsch, S. Mangold, I. Köpping, E. Borowska, R. Teichler, A. Remmele, B. Oezel Duygan, S. Ibric, A. Schnellmann, A. Wittmer, S. Köpke, K. Treyer, M. Koller, D. Weissbrodt, T. Hinterbuchner*
- 22 Master, Bachelor or Diploma students: *A. Arlettaz, Y. Eberhard, E. Ceppi, T. Sideris, S. Bogler, M. Rutsch, R. Schwaninger, B. Oezel, A. Wössner, T. Shchipkova, G. Tissot, I. van Driezum, R. Itten, L. Blanc, A. Wittmer, M. Hagenbuch, C. Frank, J. Schenzel, T. Hinterbuchner, H. Zhao, H. Lutze, M. Haller*
- 4 Technical collaborators: *A. Maccagnan, J. Asmin, E. Keller, E. Molnar*
- 5 Trainees: *H. Pinto de Magalhães, J. Reiner, M. Kipf, A. Thomsen, N. Schittli*

AWARDS and FELLOWSHIPS

- 2014-2017 *Thomson Reuters/Clarivate Analytics: nomination as a highly cited researcher*
- 1996-1999 *Swiss Federal Fellowship for the Promotion of Young Researchers: scientific research position at Eawag*
- 1994-1995 *Swiss National Science Foundation Fellowship: PostDoc The Johns Hopkins University, Baltimore USA.*

CAREER BREAKS

- 2001-today *Dual-career family with two children (employment 60-80%)*

PRESENTATIONS

Since 1991, C.S. McArdell gave 110 presentations at international and national conferences, seminars, workshops, and courses for practitioners. Of all her presentations, 54 were invited lectures, and 51 were given in the last 10 years.

PUBLICATIONS

See separate file.