



## Prof. Dr. Denise M. Mitrano

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### In Brief

My research focuses on the distribution and impacts of anthropogenic materials in environmental systems. I am particularly interested in developing analytical tools to systematically understand the mechanisms and processes driving the fate, transport and biological interactions of particles, such as nano- and microplastics, engineered nanomaterials and natural colloids. This interdisciplinary approach connecting the terrestrial water cycle and soil ecosystem services allows my research group to assess risks of anthropogenic contaminants across various ecosystems and scales. An interest in a safer by design approach is exemplified by working on the boundaries of environmental science, materials science and policy to promote sustainability, environmental health and safety of new materials. My work has been recognized by the Swiss National Science Foundation Marie Heim Vögtlin Prize for Outstanding Young Woman Researcher of the Year (2021), the James J. Morgan Early Career Award for Outstanding Contributions to Environmental Science from the ACS Division of Environmental Chemistry (2022), and the Emerging Investigator in Atomic Spectroscopy Award (2022). With 67 peer-reviewed publications (over 5400 citations, 70% of which from publications where I am first or last author, h-index 35), numerous invited keynote lectures at international scientific conferences and a substantial external funding history, I am seeking a collaborative research environment to continue to lead the field assessing and minimizing anthropogenic impacts on natural systems.

### Academic Career

#### ETH Zurich

Zurich, Switzerland

Assistant Professor of Environmental Chemistry of Anthropogenic Materials

Swiss National Science Foundation Eccellenza Professorship

Department of Environmental Systems Science

July 2020 - present

#### Eawag, Swiss Federal Institute of Aquatic Science and Technology

Dübendorf, Switzerland

Scientist (SNSF Ambizione Fellow), Process Engineering Department

Jan 2017 – June 2020

#### Empa, Swiss Federal Laboratories for Materials Science and Technology

St. Gallen, Switzerland

Postdoctoral Researcher, Environmental Risk Assessment and Management Group

April 2013 – Dec. 2016

#### Colorado School of Mines

Golden, CO USA

Ph D Student, Department of Chemistry and Geochemistry.

Thesis Title: Development of ICP-MS Based Nanometrology Techniques for characterization of nanoparticles in environmental systems

Aug. 2008 - Dec. 2012

#### Water Desalination and Reuse Center

King Abdullah University of Science and Technology (KAUST)

Thuwal, Saudi Arabia

Feb. – April 2012

#### Salve Regina University

Newport, RI, USA

Bachelors student, Majors: Chemistry, Biology, *Summa cum laude*

Aug. 2004 - May 2008

#### Rocky Mountain Biological Laboratory

Gothic, CO USA

May – Sep. 2007

## Professional Experience

### Southern Nevada Water Authority

Las Vegas, NV USA

*Consultant*, Determine presence of nanomaterials in raw and finished wastewaters

January – April 2013

### United States Geological Survey

Lakewood, CO USA

*Intern*, Uranium resource data system compilation, build interactive database on ArcGIS

May - September 2009

## Research Funding Procurement

Funding sources include Swiss National Science Foundation (SNF), the European Commission, Swiss Federal Agencies (BAFU) and competitive grant programs at ETH Zurich, Swiss Federal Institute of Aquatic Science and Technology (Eawag, the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) and Agroscope. The funding sources listed below are for projects which are directly conducted at my main host institute, though I have also been involved in a number of grants to support collaborative work (e.g., to eventually host students in my laboratory or to provide in-kind resources), but as no financial benefit to my laboratory was realized through these activities are therefore not listed below.

### Denise M. Mitrano as PI

Year	Funding	Title	PI, Cols	Duration	Award (CHF) Mitrano Share	Award (USD)
2022	Agroscope	Effects of microplastics in agriculture on arthropods in food webs	Mitrano	01.23 -12.23	105,000	120,000
2022	European Comission	European Doctoral Network: Plastics Underground	Krause (+11 Partner Universities)	01.23-12.25	323,566	369,875
2022	Chinese Scholarship Council	Effects of microplastics on soil phrosphorus leaching losses	Mitrano, Z. Wang	11.22 - 10.23	29,200	33,150
2022	Chinese Scholarship Council	Flow cytometry based techniques to detect microplastics in mixtures with algae	Mitrano, X. Wang	06.22 - 05.22	29,200	33,150
2021	ETH Zurich Foundation	Plastic particles in Arctic sea ice: pollution burdens in changing climate	Pradel, Mitrano	04.22-03.24	232,900	253,670
2020	WSL	Tracking the fate of nanoplastics in forest trees (TRACES)	Gessler, Mitrano	02.22 - 01.23	59,940	65,251
2019	SNSF	Synthesis and utility of metal-doped plastic particles and fibers: from analytical standardization to systematic understanding of fate in the environment (SURPASS)	Mitrano	07.20 - 06.25	1,946,767	2,141,444
2019	Eawag	Regulations for plastic in consumer goods- striking a balance between industrial innovation and environmental health	Mitrano	01.20-06.20	55,000	60,500
2019	Eawag	Retention of nanoplastics by conventional drinking water treatment and membrane filtration	Mitrano, Kägi, Von Gunten	01.19-06.20	158,375	174,213
2017	SNSF	The path of microplastics to the environment: fate and transport in waste water treatment systems	Mitrano	01.17-12.19	510,617	561,679
2014	BAFU	Nanomaterials in landfills: Occurrence in landfill leachates	Nowack, Mitrano	01.14 - 06.16	199,000	218,900

### Supervision of Students and Theses

Listed below are those students who I directly mentored as a main advisor and/or was officially recognized as co-supervisor for Ph D students. I co-supervise a number of other Ph D students informally through research collaborations (hosted at ETH, in Switzerland and abroad), but have not listed those collaborative activities in this section. The breadth of co-supervision and involvement in projects outside my own laboratory is reflected in my research output (i.e., publications) as co-authorships.

### Postdoctoral Researchers

Name	Dates (month.year)	Topic of research	Institute
David Mennekes	11.23 - current	Microplastics transport in riverine systems: flume studies assess impact of particle shape, size and bed load composition	ETH Zurich
Chris Whitshaw	06.23-current	Effects of micro- and nanoplastics on athropods in agricultural food webs	ETH Zurich
Alice Pradel	04.22 - current	Plastic particles in Arctic sea ice: pollution burdens in changing times	ETH Zurich
Jonatan Nunez	09.21 - 07.23	Influence and impacts of microplastics on soil ecosystems	ETH Zurich
Gerardo Pulido Reyes	02.19 - 01.21	Retention of nanoplastics in municipal drinking water treatment plants	Eawag

### Ph D Students (main supervisor, for co-supervision see below)

Name	Dates (month.year)	Title of Thesis	Degree Institution
Mike Rohling	08.23 -current	Microplastic runoff from agricultural soils	ETH Zurich
Roman Schefer	09.20 - current	Eco-corona formation on plastic - impacts on fate and transport	ETH Zurich
Francesco Parrella	09.20 - current	Heteroaggregation of plastic - modeling impacts on fate and transport	ETH Zurich

## Masters Thesis Supervision

Name	Dates (month.year)	Title of Thesis	Location	Degree Institution
Simona Berta	03.24 -08.24	Analytical method development to quantify microplastics in biological tissues	ETH Zurich	ETH Zurich
Julius Dangelmaier	03.24 -08.24	Ecotoxicology of nanoplastics for soil-dwelling organisms	ETH Zurich	Uni Tübingen
Viola Dully	03.24 -08.24	Transport of microplastics in riverine systems	ETH Zurich	ETH Zurich
Florian Odic	01.24 - 07.24	Accumulations of nanoplastics in frazil sea ice	ETH Zurich	University of West Britian
Celia Paolucci	03.23 -08.23	Effects of plastic aging on eDNA adsorption and protection from enzymatic digestion	ETH Zurich	Université Paris Cité
Norberto Aquino	01.23 -07.23	Geochemical cycling of heavy metals in Greenlandic Fjords	ETH Zurich	University del Pais Vasco
Lurui Niu	10.22 - 04.23	How different Fe complexes influence the interactions of Fe sorption to microplastics	ETH Zurich	ETH Zurich
Stefano Amberg	05.22 - 12.22	Policy impact analysis of microplastics regulation in the EU	ETH Zurich	ETH Zurich
Nicolas Muller	02.22 - 08.22	eDNA sorption to microplastics under environmentally relevant conditions	ETH Zurich	ETH Zurich
Fabienne Maire	09.21 - 05.22	Heteroaggregation of microplastics and natural inorganic nanoparticles	ETH Zurich	ETH Zurich
Alissa Tophinke	08.21 - 02.22	Assessment and development of extraction methods for quantitative microplastics analysis in organic matrices	ETH Zurich	ZHAW
Andreas Keller	10.18 - 4.19	Fate of Particulate Plastic in Sewage Sludge Treatment and Transport Behaviour in Unsaturated Porous Media	Eawag	ETH Zurich
Manuel Holzner	8.18 -3.19	Trophic transfer of nanoplastic particles and microplastic fibers from stream periphyton to the freshwater snail <i>Physa acuta</i>	Eawag	ETH Zurich
Stefan Frehland	03.18 - 2.19	Fate of Nanoplastic Particles and Microplastic Fibers in Wastewater Treatment Plants (WWTP)	Eawag	Uni Basel
Michael Schmiedgruber	11.17 - 7.18	Assessing Particulate Plastic Removal in Wastewater Treatment Plants: Use of Metal-Containing Microplastic Fibers for Quantitative Analysis	Eawag	TU Berlin
Felix Schmidt	10.17 - 3.18	Assessing Particulate Plastic Removal in Wastewater Treatment Plants: Use of Metal-Containing Nanoplastics for Quantitative Analysis	Eawag	ETH Zurich
Edgar Hernandez	08.15-08.16	Microplastic fiber release from textiles	Empa	ETH Zurich
Kamyar Mehrabi Kockehbyoki	08.14 - 12.14	Nanomaterial release from landfills	Empa	EPFL
Elisa Rimmel	2013	Behavior of Ag and Ag-composite materials for the textile industry: Release in the eco- and technosphere	Empa	Hochschule Niederrhein

## Masters Semesters Projects and Intern Students at ETH Zurich

Name	Date (year)	Research topic	Degree Institution
Melanie Emery	2024	Quantification of microplastics in soils	ETH Zurich
Ulla Hartmann	2021	Fate and transport of microplastics in aqueous systems	TU Darmstadt
Silja Boner	2021	Eco-corona formation on (micro)plastics	ETH Zurich
Nora Bernet	2021	Extraction of microplastics from sediments	ETH Zurich

*Supervision of interns hosted outside ETH Zurich*

Name	Date	Company/Institute	Topic
Nicolas Müller	8.23 - 02.24	Nestle Research Center	Accelerated biodegradation of plastics packaging
Gioele Piatti	10.22 - 04.23	The Ocean Cleanup	Analysis of plastics tracking techniques in rivers
Marc Bast	08.22 - 03.23	Cantonal administratino Zurich, Department of water management	GIS based risk map for possible danger to waterbodies from pesticides and nutrients
Manqui Gao	09.22 - 2.23	Odlo and Swiss Federal Institute of Science and Technology (Empa)	Microplastic fibers released from textiles
Yiwen Zhang	01.22 - 07.22	Dow Chemical	Product safety specialist, GBREACH registrations
Qiyao Fan	09.21 - 12.21	Swiss Federal Institute of Science and Technology (Empa)	Microplastic fibers released from textiles

*Co-Supervision of Ph D Students (officially recognized)*

Name	Date	Title of Thesis	Main Supervisor	Degree Institution
Weibke Mareile Heinz	2019- current	Nano and microplastic behavior in terrestrial ecosystems	Geert Cornelis	SLU
Yaping Cai	2016-2021	Microplastics and the textile sector: experimental studies concerning the release from fabrics and environmental risk assessment in laundry care products	Bernd Nowack	ETH
Lars Hildebrandt	2017-2021	Development and application of analytical methods to sample, isolate and characterize nano- and microplastics in aquatic environments and associated trace metals	Daniel Proefrock	University Hamburg

*Hosting of guest Ph D students (> 4 weeks)*

Name	Date	Topic of Research	Supervisor at Degree Institution	Degree Institution
Nanna Dyg Rathje Klemmensen	08.23 - 1.24	Nanoplastic transport through soil	Jes Vollerstein	DTU
Ziwan Wang	11.22 - 10.23	Effects of microplastics on soil phrosphorus leaching losses	Xinqiang Liang	Zhejiang University
Xinjie Wang	06.22 - 05.22	Flow cytometry based techniques to detect microplastics in mixtures with algae	Yang Li	Beijing Normal University
Maria Elvira Murazzi	04.22 - 03.23	Investigating the possibility of nanoplastics uptake by different forest tree species	Arthur Gessler	WSL
Arianna Bellasi	02.22 - 08.22	Uptake and depuration of microlastics and metal colloids in worms	Roberta Bettinetti	Universita Dell'Insubria
Paula Ballikaya	07.21 - 08.22	Foliar penetration of silver nanoparticles in thre tree species	Paolo Cherubini	University of Zurich
Jean Pruvost	02.22 - 03.22	Extration methodolgies of MPs from soil	Brice Mourier	Université de Lyon (France)

## External Examiner of Ph D Thesis

Name	Date	Title of Thesis	Degree Institution
Joël Rüthi	28.11.22	Characterization of the plastisphere microbiome and plastic-degrading microorganisms in cold terrestrial environments	ETH Zurich
Tong Yang	10.05.22	Micro- and nanoplastics: release from polyester textiles during washing or abrasion and hazard assessment	ETH Zurich
Alice Pradel	25.11.21	Environmental fate and behavior of. Nanoplastics: implications of physico-chemical processes	Université de Rennes 1
Emellia Uurasjärvi	12.11.21	Microplastics - A challenge for environmental analytical chemistry	University of Eastern Finland
Reina Maricela Blair Espinoza	15.10.19	Microplastic in wastewater treatment systems and receiving waters	University Glasgow
Anna Beltzung	20.12.17	Synthesis of polyacrylonitrile-based functional materials for adsorption, catalysis and traceable nanoplastics	ETH Zurich
Laura Roverskov Hegelund	07.09.17	Characterization of waste from nano-enabled products: occurrence, distribution, fate and nanoparticle release	Danish Technical University

## Teaching Experience

- Microplastics Workshop for Early Career Researchers (2020 – present)
  - Organizer of a week-long interdisciplinary scientific and career training event focused on inter- and transdisciplinary workshop for 80 students; participants are Ph D and Postdoc researchers worldwide
- Nanomaterials in the environment (2015 – present)
  - ETH Zurich, Master's level together with B. Nowack and T. Buchelli, each 33%
- Analytical Strategies (2019 – present)
  - ETH Zurich, Master's level, main organizer Renato Zenobi. Yearly guest lecture fall semester
- Institute of Biogeochemistry and Pollutant Dynamics Term Paper and Presentation (2020 – present)
  - ETH Zurich, Master's level, main organizer Lenny Winkel. Supervise 1 student per semester to write an approximate 15 page term paper on varying topics (in this case, related to microplastics) and preparation for oral presentation
- USYS Integration Excursions (2022 – present)
  - ETH Zurich, Bachelor's level, one or two day excursion each Spring to sample microplastics and understand fate and transport in various contexts.
- Polymers (2020 – present)
  - HES-SO (Hochschule für Technik un Architektur), Freiburg, Switzerland. Masters Level. Main Organizer: Marti Roger Yearly guest lecture spring semester
- Environmental Toxicology (2021 – present)
  - Berner Fachhochschule, Zollikofen, Switzerland. Masters Course. Yearly guest lecture spring semester
- Geochemistry of metals in the environment (2011- 2012)
  - Colorado School of Mines, Bachelors level, co-field session organizer and instructor. Main organizer: James Ranville
- Quantitative Chemical Measurements (2008 – 2010)
  - Colorado School of Mines, Bachelors level, Teaching Assistant, provided introductory lectures and laboratory instruction
- General Chemistry (2008 – 2009)
  - Colorado School of Mines, Bachelors level, Teaching Assistant, provided introductory lectures and laboratory instruction
- Organic Chemistry (2005 – 2008)
  - Salve Regina University, Bachelors level, teaching assistant
- General Chemistry (2005 – 2008)
  - Salve Regina University, Bachelors level, teaching assistant

Advanced courses:

2018 Nanomaterial Characterization. IMBG 7<sup>th</sup> biannual International Meeting. Metallic nanoparticles: health, environment, applications and safer by design

In addition to regular semester lectures, one key highlight is my development of a week-long workshop for early career researchers in the field of microplastics research that I organize every year. The overarching goal of this workshop is on increased interaction between students (Ph D candidates, early-stage Postdocs) and field-leading experts. Through a series of novel and targeted interactive development and break-out sessions, the students not only learn about the latest scientific developments in the field, but also learn about writing and publishing skills, presentation skills, scientific ethics and career opportunities and development.

### Conference and Workshop Organization and Funding Procurement

- 2023 Microplastics: Best practices and expert insights for young researchers. Ascona, Switzerland. 100 attendees. Co-organizers: Stephan Wagner, Andreas Gondikas, Karin Mattsson
- 2023 Swiss National Academy Young Faculty Meeting: Effective Communication within Academia and Beyond. 35 attendees Co-organizers: Patrick Steinegger, Jovana Milic, Leo Merz.
- 2022 Impacts of (micro)plastic on freshwater and terrestrial ecosystems. Monte Verita, Ascona, Switzerland. 125 attendees. Co-organizers: Ralf Kaegi, and Thilo Hofmann
- 2022 Microplastics: Best practices and expert insights for young researchers. Athens, Greece. 80 attendees. Co-organizers: Stephan Wagner, Andreas Gondikas, Karin Mattsson
- 2021 Microplastics: Best practices and expert insights for young researchers. (Virtual) 350 attendees. Co-organizers: Stephan Wagner, Andreas Gondikas, Karin Mattsson
- 2018 Nano and microplastics in technical and freshwater systems. Monte Verita, Ascona, Switzerland. 125 attendees. Co-organizers: Bernhard Wehrli, Ralf Kaegi, and Thilo Hofmann

Year	Conference/Workshop Title	Funding sources (excluding registration fees)	Funds acquired (CHF)
2023	Understanding microplastics for early career researchers: Best practices and expert insights	Congressi Stefano Francini Foundation, Plastics Europe, Royal Society of Chemistry, Bruker, Nexus Monarc	42,000
2023	Swiss National Academy: Young Faculty Meeting	Swiss National Academy, Helvetica	20,000
2022	Impacts of (micro)plastic on freshwater and terrestrial environments	Congressi Stefano Francini Foundation, Zurich department of water, water and energy, Perkin Elmer, Agilent, ES&T Letters, Royal Society of Chemistry	32,550
2022	Understanding microplastics for early career researchers: Best practices and expert insights	European Commission COST Action:Priority, Plastics Europe, Environmental Science and Technology Letters,	41,500
2018	Nano- and microplastics in technical and freshwater systems	Congressi Stefano Francini Foundation, Swiss Federal Office for the Environment, Perkin Elmer	24,060

### Conference Session Chair

- 2023 Microplastics. International Conference of the Polymer Processing Society, St. Gallen, Switzerland
- 2023 Towards Harmonized Nano- and Microplastics Quantification: Reference Materials, Analytics and Improved Experimental Designs. Society for Environmental Chemistry and Toxicology (SETAC). Dublin, Ireland
- 2023 Current State-of-the-Art in Understanding the Occurrence and Implications of Plastics in Terrestrial Environments. Society for Environmental Chemistry and Toxicology (SETAC). Dublin, Ireland
- 2022 Placing nanoplastics in the context of global plastic pollution: measuring their relevant fate, transport and implications. Society for Environmental Chemistry and Toxicology (SETAC). Copenhagen, Denmark
- 2022 Plastics in the terrestrial environment: improving understanding of occurrence and impacts as analytics improve. Society for Environmental Chemistry and Toxicology (SETAC). Copenhagen, Denmark
- 2021 Nanoplastics Part 1: Fate, Transport and Exposure. Society for Environmental Chemistry and Toxicology

- (SETAC), Portland, Oregon, USA
- 2020 Soils as sinks for plastics: analysis, transport and effects of nano- and microplastics in terrestrial environments. Society for Environmental Chemistry and Toxicology (SETAC) Dublin, Ireland
- 2018 New Horizons in Particulate Polymer Analysis: Micro- and Nanoplastics and Tire Rubber Detection, Characterization and Impacts in the Environment. Society for Environmental Chemistry and Toxicology (SETAC), Rome, Italy
- 2017 From Nano to Global; Gordon Research Conference on Environmental Nanotechnology; Vermont, USA
- 2016 Characterization of nanomaterials in complex systems; ICEENN (International Conference on the Environmental Effects of Nanoparticles and Nanomaterials), Golden CO, USA

### Conference Scientific Committee

- 2023 38<sup>th</sup> International Conference of the Polymer Processing Society, St. Gallen, Switzerland
- 2020 NanoSAFE, Grenoble, France

### Scientific Journal Editorial Board Appointments

- 2022 – current Environmental Science & Technology Letters (Topic Editor, Microplastics)
- 2021 – current Microplastics and Nanoplastics (Founding Editorial Board Member)
- 2020 – current Frontiers in Environmental Science – Biogeochemical Dynamics (Associate Editor)
- 2020 – current Environmental Science and Technology (Editorial Advisory Board)
- 2019 – current Nature Applied Sciences (Editorial Board Member)
- 2018 – current Environmental Pollution (Editorial Board Member)
- 2019 – 2020 Frontiers in Environmental Science (Lead guest editor, “Biogeochemistry of anthropogenic particles” special issue)

### Acting Reviewer for Peer Reviewed Journals and Funding Agencies (selection)

Nature Nanotechnology, Nature Communications, Environmental Science: Nano, Environmental Science and Technology (ES&T), Analytical Chemistry, Water Research, Journal of Atomic Absorption Spectroscopy (JAAS), Environmental Chemistry and Toxicology, Environmental Pollution, NanoImpact

Review for funding agencies: European Research Commission, Swiss National Science Foundation, Dutch Research Council (GROOT Grants), Scottish Water Authority, Woods Hole Oceanographic Institute

### Professional working groups and committees

- American Chemistry Council Expert Group on Microplastics Reference Materials (2021 – current)
- UN Working Group GESAMP 40: Sources, fate and effects of marine plastics and microplastics; 4<sup>th</sup> phase: assessing the social, economic and ecological risks of marine litter and microplastics (2021 – current)
- COST – CA20101 – Plastics monitoring detection remediation recovery (PRIORITY). Swiss management committee representative, lead two working groups (Nanoplastics and Analytics) (2021 – current)

### Affiliations/Memberships

Society of Environmental Toxicology and Chemistry (SETAC)	2008-Present
American Chemical Society	2007-Present
National SETAC Rocky Mountain Student Representative (NASAC)	2011-2012
Colorado School of Mines Graduate Student Association, Executive Council	2010-2012



## Honors and Awards

“Who’s who in Zurich - 100 most influential people (Division: Science)	2022
James J. Morgan Early Career Award, ACS Division of Environmental Chemistry	2022
Emerging Leader in Atomic Spectroscopy Award	2022
Marie Heim-Vögtlin prize – outstanding woman researcher of the year in Switzerland	2021
Eawag (Swiss Federal Institute of Aquatic Science and Technology) Academic Transition Grant	2020
Swiss National Science Foundation Eccellenza Professorial Fellowship	2020-2025
Swiss National Science Foundation Ambizione Fellowship	2017-2020
Top 5 exceptional paper, 2014” from Environmental Toxicology and Chemistry (Notter, Mitrano and Nowack, 2014)	2015
2012 U.S. Fulbright Competition, Selected Candidate to the Netherlands	2012
Best Poster Presentation, 15 <sup>th</sup> International Symposium of Field and Flow Based Separations, San Francisco, CA, USA	2011
GAANN (Graduate Assistance in Areas of National Need) Fellowship	2009-2011
USGS Fellowship, Edna Bailey Sussman Award	2009
American Chemical Society Award, Best Student, Rhode Island Chapter	2008
Chemistry Departmental Award, Salve Regina University	2008
New Hampshire Charitable Foundation Fellowship Scholarship (4 years)	2004-2008
Salve Regina University Trustees Scholarship (4 individual years)	2004-2008
Dean’s List Salve Regina University (8 semesters)	2004-2008

## Publications

Number of Peer Reviewed Articles: 67

h-index: 35

Total Citations: > 5400 (70% of which from publications where I am first or last author)

**Bold:** Self

Underlined: Corresponding Author

## Papers submitted and in review

6. Nicolas D. Muller, Anish Kirtane, Roman B. Schefer, Denise M. Mitrano. **eDNA Adsorption to Microplastics: Impacts of Water Chemistry and Polymer Physicochemical Properties**. Environmental Science and Technology. Under Review.
5. Arianna Gazzi, Laura Fusco, Roman B. Schefer, Linda Giro, Senan Michael D'Almeida, Marco Orecchioni, Denise M. Mitrano, **Lucia Gemma Delogu**. **Nanoplastics: immune impact, detection, and internalization after human blood exposure assessed by single-cell mass cytometry**. Advanced Sciences. Under Review.
4. Xinjie Wang, Yang Li, Alexandra Kroll, Denise M. Mitrano. **Differentiating microplastics from natural particles in aqueous suspensions using flow cytometry with machine learning**. Environmental Science and Technology. Under Review.
3. Amy Ockenden, Denise M. Mitrano, Melanie Kah, Lous A. Tremlay, Kevin S. Simon. **Predator traits Influence trophic transfer of nanoplastics in aquatic systems**. Environmental Science and Technology Letters. Environmental Science and Technology Letters. Under review.
2. Stefano Amberg and Denise M. Mitrano. **Exploring the Essential Use Concept for Primary Microplastics Regulation in the EU**. Environmental Science and Technology. Under review.
1. Francesco Parrella, Stefano Brizzolara, Markus Holzner, Denise M. Mitrano. **Heteroaggregation between microplastics and algae can accelerate vertical transport affecting biogeochemical cycles**. Nature Water. Under review.

## Published Manuscripts

### 2023

67. Qiquing Chen, Gu tao Shi, Laura E. Revell, Jun Zhang, Chencheng Zuo, Danhe Wang, Eric Le Ru, Guangmei Wu, **Denise M. Mitrano**. **Long-range Atmospheric Transport of Microplastics across the Southern Hemisphere**. Nature Communications. Accepted
66. Lyndsey Hendriks, Tina Buerki-Turnherr, Vera M. Kissling, Denise M. Mitrano. **Development of single-cell ICP-TOFMS to quantify nanoplastics in human cells**. Environmental Science: Nano 2023, 57, 18, 7263 - 7272.
65. Denise M. Mitrano, Moritz Bigalke, Andy M. Booth, Camilla Catarci Cartney, Scott Coffin, Matthias Egger, Andreas Gondikas, Thorsten Hueffer, Albert A. Koelmans, Elma Lahive, Karin Mattsson, Stephanie Reynaud, Stephan Wagner. **Training the next generation of plastics pollution researchers: Tools, skills and career perspectives in a transdisciplinary field**. Microplastics and Nanoplastics. 2023, 3, 24, 1-12
64. Berta Bonet, Adit Chaundhary, Stefan Krause, Timothy Hoellein, **Denise M. Mitrano**, Iseult Lynch. **Exploring the combined effect of climate change and pollution on freshwater ecosystems**. Frontiers in Environmental Science. 2023. 11:1293169
63. **Denise M. Mitrano**, Jovana V. Milić, Patrick Steinegger, Leo Merz. **Reflections on the SCNAT Young Faculty Meeting 2023: Effective Communications within Academia and Beyond**. Chimia. 77, 626-629, (2023)
62. Roman Schefer, Antonius Armanious, Denise M. Mitrano. **Eco-corona formation on plastics: Adsorption of dissolved organic matter to pristine and photochemically weathered polymer surfaces**. Environmental Science and Technology. 2023, 57, 39, 14707 – 14716.
61. Thilo Hofmann, Subhasis Ghoshal, Nathalie Tufenkji, Jan Franklin Adamoswski, Stephane Bayen, Qiquing Chen, Phillip Demokritou, Markus Flury, Thorsten Huffer, Natalia P. Ivleva, Rong Ji, Richard L. Leask, Milan Maric, **Denise M. Mitrano**, Michael Sander, Sabine Pahl, Matthias C. Rillig, Tony

- R. Walker, Jason C. White, Kevin J. Wilkinson. [Pathways to more sustainable use of plastics in plant agriculture](#). *Nature Communications Earth & Environment*. 4, 332 (2023)
60. **Denise M. Mitrano**, Miriam L. Diamond, Jae-Hong Kim, Kam Chiu Tam, Min Yang, Zhanyun Wang. [Balancing New Approaches and Harmonized Techniques in Nano- and Microplastics Research](#). *ACS Sustainable Chemistry & Engineering*. 2023. 11, 24, 8072 – 8705
59. Lyndsey Hendriks and **Denise M. Mitrano**. [Direct measurement of microplastics by carbon-detection via single particle ICP-TOFMS in complex aqueous suspensions](#). *Environmental Science and Technology*. 2023, 57, 18, 7263-7272
58. Margit Heinlaan, Kärt Viljalo, Jelizaverta Richter, Anna Ingwersen, Heiki Vija, **Denise M. Mitrano**, [Daphnia magna 4-generation exposure to polystyrene nanoplastics showed no major adverse effects](#). *Environmental Pollution*. 323 (2023) 121213
57. Mark C. Surette, **Denise M. Mitrano**, [Kim R. Rogers](#). [Extraction and Concentration of Nanoplastic Particles from Aqueous Suspensions using Functionalized Magnetic Nanoparticles and a Magnetic Flow Cell](#). *Microplastics and Nanoplastics*. 2023, 3 (1), 1-12
56. Miguel Tamayo-Belda, Ana Villanueva Perez-Olivares, Gerardo Pulido-Reyes, Keila Martin-Betancor, Miguel Gonzalez-Pleiter, Francisco Leganes, **Denise M. Mitrano**, Roberto Rosal, [Francisca Fernandez-Pinas](#). [Tracking nanoplastics in freshwater microcosms and their impacts to aquatic organisms](#). *Journal of Hazardous Materials*. 2023, 445, 130625
55. [Nathaniel Clark](#), Farhan Khan, Charlotte Crowther, **Denise M. Mitrano**, Richard Thompson. [Uptake, distribution and elimination of palladium-doped polystyrene nanoplastics in rainbow trout \(Oncorhynchus mykiss\) following dietary exposure](#). *Science of the Total Environment*. 854, 2023, 158765
- 2022**
54. [Francisca Ribeiro](#), **Denise M. Mitrano**, Christian Hacker, Paulina Cherek, Kevin Brigden, Sarit Kaserzon, Kevin V. Thomas, Tamara Galloway. [Short depuration of oysters intended for human consumption is effective at reducing exposure to nanoplastics](#). *Environmental Science and Technology*. 2022, 56, 23, 16716-16725
53. [Michael S. Bank](#), **Denise M. Mitrano**, Matthias C. Rillig, Carol Sze Ki Lin, Yong Sik Ok. [Embrace complexity to understand microplastic pollution](#). *Nature Review Earth and Environment*. 3 (11), 736 - 737
52. [Nathaniel Clark](#), Farhan Khan, **Denise M. Mitrano**, David Boyle, Richard Thompson. [Demonstrating the translocation of nanoplastics across the fish intestine using palladium-doped polystyrene in a salmon gut-sac](#). *Environment International*, 159, 106994
51. Mischa Aeclimann, Guangyu Li, Zamin Kanji, **Denise M. Mitrano**. [Microplastics and nanoplastics in the atmosphere: the potential impacts on cloud formation processes](#). *Nature Geosciences*. 2022, 15, 967-975
50. Alissa H. Tophinke, Akshay Joshi, Urs Baier, Rudolf Hufenus, **Denise M. Mitrano**. [Systematic development of extraction methods for quantitative microplastics analysis in soils using metal doped plastics](#). *Environmental Pollution*. 311 (2022) 119933
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47. [Stefania Federici](#), Zahida Ademovic, Monica J.B. Amorium, Moritz Bigalke, Mariacristina Cocoa, Laura Elenora Depero, Joydeep Dutta, Wolfgang Freitsche, Nanna Bloch Hartmann, Gabriela Kalcikova, Nicolas Keller, Thomas C. Meisel, **Denise M. Mitrano**, Liam Morrison, Jean-Marie Raquez, Aleksandra Tubic, Milica Velimirovic. [COST Action PRIORITY: an EU perspective on micro- and nanoplastics as global issues](#). *Microplastics*. 2022. 1 (2), 282-290.
46. [Ana Elena Pradas del Real](#), **Denise M. Mitrano**, Hiram Castillo Michel, Mohammad Wazne, Juan Reyes Herrar, Emely Bortel, Bernard Hesse, Geraldine Sarret. [Assessing nanoplastic exposure to plants with advanced nanometrology techniques](#). *Journal of Hazardous Materials*. 2022. 430, 128356

45. Nathaniel J. Clark, Farhan R. Kahn, **Denise M. Mitrano**, David Boyle, Richard C. Thompson. [Demonstrating the translocation of nanoplastics across the fish intestine](#). *Environment International*. 2022. 159, 106994
44. Elma Lahive, Richard Cross, Aafke Saarloos, Alice Horton, Claus Svendsen, Rudolf Hufenus, **Denise M. Mitrano**. [Earthworms ingest microplastic fibres and nanoplastics, but shape affects egestion rate and long-term retention](#). *Science of the Total Environment*. 2022. 807, 151022

**2021**

43. **Denise M. Mitrano** and Martin Wagner. [A sustainable future for plastics considering material safety and preserved value](#). *Nature Reviews Materials*. 2021. 1-3
42. Wiebke Mareile Heinze, **Denise M. Mitrano**, Elma Lahive, John Koestel, Geert Cornelis. [Nanoplastics transport in soil via bioturbation by \*Lumbricus terrestris\*](#). *Environmental Science and Technology*. 2021, 55, 24, 16423-16433
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38. Yaping Cai, **Denise M. Mitrano**, Rudolf Hufenus and Bernd Nowack. [Formation of Fiber Fragments during abrasion of Polyester Textiles](#). *Environmental Science and Technology*. 2021. 55, 12, 8001 – 8009
37. **Denise M. Mitrano**, Antonia Praetorius, Gaetane Lespes, Vera I. Slaveykova. [Biogeochemistry of anthropogenic particles: Connecting research themes across particle chemistry, environments and impact](#). *Frontiers in Environmental Science*. 2021. 9:667140
36. **Denise M. Mitrano**, Peter Wick, Bernd Nowack. [Placing nanoplastics in the context of global plastic pollution](#). *Nature Nanotechnology*. 2021. 16 (5), 491-500

**2020**

35. Carmen KM Chan, Curie Park, King Ming Chan, Daniel CW Mak, James KH Fang, **Denise M. Mitrano**. [Microplastic fibre releases from industrial wastewater effluent: a textile wet processing mill in China](#). *Environmental Chemistry*, 2020
34. **Denise M. Mitrano** and Wendel Wohlleben. [Microplastic regulation should identify priority cases to incentivize both innovation and environmental safety](#). *Nature Communications* 2020. 11, 1, 1-12.
33. Lars Hildebrandt, **Denise M. Mitrano**, Tristan Zimmermann, Daniel Proefrock. [A nanoplastic sampling and enrichment approach by continuous flow centrifugation](#). *Frontiers in Environmental Science*. 2020. 8:89
32. Victoria Fringer, Liam Fawcett, **Denise M. Mitrano**, Melissa Mauer-Jones. [Impacts of Nanoplastic on the Viability and Riboflavin Secretion in the Model Bacteria \*Shewanella oneidensis\*](#). *Frontiers in Environmental Science*. 2020. 8:97
31. Stefan Frehland, Ralf Kaegi, Rudolf Hufenus, **Denise M. Mitrano**. [Long-term assessment of nanoplastic particles and microplastic fiber flux through a pilot wastewater treatment plant using metal-doped plastics](#). *Water Research*. 2020. 115860.
30. Yaping Cai, **Denise M. Mitrano**, Manfred Heuberger, Rudolf Hufenus, Bernd Nowack. [The origin of microplastic fibers in polyester textiles: the textile production process matters](#). *Journal of Cleaner Production*. 2020, 121970
29. Yaping Cai, Tong Yang, **Denise M. Mitrano**, Manfred Heuberger, Rudolf Hufenus, Bernd Nowack. [A systematic study of microplastic fiber release from 12 different polyester textiles during washing](#). *Environmental Science and Technology*. 2020, 54, 8, 4847
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**2019**

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26. Michael Schmiedgruber, Rudolf Hufenus, **Denise M. Mitrano** **Mechanistic understanding of microplastic fiber fate and sampling strategies: Synthesis and utility of metal doped polyester fibers**. *Water Research*. 2019, (155) 423-430
25. **Denise M. Mitrano**, Anna Beltzung, Stefan Frehland, Michael Schmiedgruber, Alberto Cingolani, Felix Schmidt. **Synthesis of metal-doped nanoplastics and their utility to investigate fate and behavior in complex environmental systems**. *Nature Nanotechnology*. 2019. (14) 362-368

**2018**

24. Florian Part, Nicole Berge, Pawel Baran, Anne Stringfellow, Wenjie Sun, Shannon Bartelt-Hunt, **Denise M. Mitrano**, Liang Li, Pierre Hennebert, Prof. Quicker, and Marion Huber-Humer. **Review of the fate and engineered nanomaterials in municipal solid waste streams**. *Waste Management* 2018, (75) 427 – 449
23. Bernd Nowack and **Denise M. Mitrano** **Procedures for the production and use of synthetically aged and product released nanomaterials for further environmental and ecotoxicity testing**. *NanoIMPACT*. 2018, (10) 70 – 80.

**2017**

22. Edgar Hernandez, Bernd Nowack and **Denise M. Mitrano**. **Synthetic Textiles as a Source of Microplastics from Households: A Mechanistic Study to Understand Microfiber Release During Washing**. *Environmental Science and Technology*. 2017, 51 (12) 7036-7046
21. Kamyar Mehrabi, Bernd Nowack, Yadira Arroyo Rojas Dasilva, **Denise M. Mitrano**. **Improvements in Nanoparticle Tracking Analysis to Measure Particle Aggregation and Mass Distribution: A Case Study on Engineered Nanomaterial Stability in Incineration Landfill Leachates**. *Environmental Science and Technology*. 2017, 51 (10) 5611 – 562
20. Tian Yin Sun, **Denise M. Mitrano**, Nikolaus A. Bornhöft, Martin Scheringer, Konrad Hungerbühler and Bernd Nowack. **Envisioning nano release dynamics in a changing world: using dynamic probabilistic modeling to assess future environmental emissions of engineered nanoparticles**. *Environmental Science and Technology* 2017, 51 (5), 2854-2863
19. Xu He, **Denise M. Mitrano**, Bernd Nowack, Yeon Kyoung Bahk, Claudia Schreiner, Melanie Bürki, Renato Figi, Jing Wang. **Agglomeration Potential of TiO<sub>2</sub> in synthetic landfill leachates made from the fly ash of different incinerated wastes**. *Environmental Pollution* 2017, 223, 616-623
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**2016**

16. **Denise M. Mitrano**, Enzo Lombi, Yadira Arroyo Rojas Dasilva, and Bernd Nowack. **Unraveling the Complexity in the Aging of Nano-enhanced Textiles: A Comprehensive Sequential Study on the Effects of Sunlight and Washing on Silver Nanoparticles**. *Environmental Science & Technology*. 2016, 50 (11) 5790-5799
15. **Denise M. Mitrano**, Pawena Limpiteeprakan, Sandhya Babel and Bernd Nowack. **Durability of nano-enhanced textiles through the life cycle: releases from landfilling after washing**. *Environmental Science: Nano* 2016, 3(2) 375-387
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**2015**

13. **Denise M. Mitrano**, Yadira Arroyo, Bernd Nowack. **Effect of variations of washing solution chemistry on chemical changes in the laundry cycle**. *Environmental Science & Technology*. 2015, 49 (16) 9665-9673
12. **Bernd Nowack**, Mohamed Baalousha, Nikolaus Bornhofs, Qasim Chaudhry, Geert Cornelis, Jane Cotterill, Martin Hasselov, Jamie Lead, **Denise M. Mitrano**, Frank von der Kammer, Tim Wontner-Smith. **Progress towards the validation of modeled environmental concentrations of engineered nanomaterials by analytical measurements**. *Environmental Science: Nano*. 2015, 2, 421-428
11. F. Piccinno, R. Hischer, **D. M. Mitrano**, S. Andrew, S. Seeger, **C. Som**. **Multi-perspective Application Selection: A method to identify sustainable applications for new materials using the example of cellulose nanofiber reinforced composites**. *Journal of Cleaner Production*. 2016, 112, 1199-1210
10. **Denise M. Mitrano**, Sylvie Motellier, Simon Clavaguera, Bernd Nowack. **Using a life cycle approach to understand nanomaterial aging and transformations during use of nano-enhanced products**. *Environment International*. 77 (2015) 132-147

**2014**

9. **Dominic Notter**, **Denise M. Mitrano**, Bernd Nowack. **Are nanosized or dissolved metals more toxic? A meta-analysis**. *Environmental Toxicology and Chemistry*. 2014. 33, 2733-2739 (*Selected one of the top 5 exceptional papers in 2014 submitted to ET&C*)
8. **D.M. Mitrano**, E. Rimmel, A. Wichser, R. Erni, M. Height, B. Nowack. **Presence of Nanoparticles in Wash Water from Conventional Silver and Nano-Silver Textiles**. *ACS-Nano*. 2014. 8 (7), 7208-7219.
7. Lindsay M. Furtado, Md Ehsanul Hoque, **Denise M. Mitrano**, James F. Ranville, Beth Cheever, Paul C. Frost, Marguerite A. Xenopoulos, Holger Hintelmann, **Chris D. Metcalfe**. **Transformations of Silver Nanoparticles in Lake Littoral Mesocosms**. *Environmental Chemistry*. 2014, 11, 419-430
6. **D.M Mitrano**, J.F. Ranville, A. Bednar, K. Kazor, A.S. Hering, and C.P. Higgins. **Tracking dissolution of silver nanoparticles at environmentally relevant concentrations in laboratory, natural and processed waters using single particle ICP-MS (spICP-MS)**. *Environmental Science: Nano*. 2014, 1 (3), 248-259

**2012**

5. **A.J. Bednar**, A.R. Poda, **D.M. Mitrano**, A.J. Kennedy, E.P. Gray, J.F. Ranville, C.A. Hayes, F.H. Crocker, J.A. Steevens. **Comparison of on-line detectors for field flow fractionation analysis of nanomaterials**. *Talanta*. 2012. 104, 140-148
4. **Mitrano D.M.**, Ranville J.F., Neubauer K., Thomas R. **Field-Flow Fractionation Coupled with ICP-MS for the Analysis of Engineered Nanoparticles in Environmental Samples**. *Spectroscopy*. 2012. 27 (9), 2-8
3. **Mitrano D.M.**, Barber A., Bednar A., Westerhoff P., Higgins C.P., **Ranville J.F.** **Silver nanoparticle characterization using Single Particle ICP-MS (SP-ICP-MS) and Asymmetrical Flow Field Flow Fractionation ICP-MS (AF4-ICP-MS)**. *JAAS*. 2012, 27, 1131-1142
2. **Mitrano, D.**, Leshner, E., Bednar, A., Monserud, J., Higgins, C., **Ranville, J.** **Detection of nano-Ag using single particle inductively coupled plasma mass spectrometry**. *ET&C*. 2012, 31, 115-121

**2011**

1. **Poda A.R.**, Bednar A.J, Kennedy A.J., Harmon A., Hull M., **Mitrano D.M.**, Ranville J.F., Stevens J. **Characterization of silver nanoparticles using flow-field flow fractionation interfaced to inductively coupled plasma mass spectrometry**. *Journal of Chromatography A*. 2011, 1218, 4219-4425

**Reports and Contributions**

4. NanoMILE Deliverable D3.1: Report on environmental transformation reactions. Using a life cycle approach to understand manufactured nanomaterial aging and transformations during use of nano-enhanced products. **D. M. Mitrano**, B. Nowack, S. Motellier, S. Clavaguera. 2014.
3. Application Note, Quantitative Evaluation of Nanoparticle Dissolution Kinetics using Single Particle ICP-MS: A Case Study with Silver Nanoparticles. **Mitrano, D.M.**, Ranville JF, Stephan, Chady. Perkin Elmer, Inc. 2014.
2. Application Note, Coupling Flow Field Flow Fractionation to ICP-MS for the Detection and

Characterization of Silver Nanoparticles. **Mitrano D.M.**, Ranville JF, Neubauer. Perkin Elmer, Inc. 2012.

1. Application Note, An Introduction to Flow Field Flow Fractionation and Coupling to ICP-MS. **Mitrano D.M.**, Ranville JF, Neubauer. Perkin Elmer, Inc. 2011.

### *Written public outreach and media attention*

The research which is undertaken in my group has received significant attention from the public media, and therefore I regularly engage with journalists personally, at least once a month. In addition, media outlets pick up our research findings after publication and include it as a reference in their discussions on the implications of nano- and microplastics in the environment, as well as how to deal with pervasive problems of plastic waste generation, possibility for (micro)plastic regulation, and the development of a more sustainable relationship with plastic throughout its entire life-cycle. It is often difficult to track my media output/impact precisely, but as an example of the variety of outlets in which me and my work have appeared, I have recently been featured on the website SwissInfo (bio-piece and focus on plastics in the environment, Vogue (to discuss sustainable textiles and microplastic fibers) and the popular free magazine in Switzerland 20Minuten (nano- and microplastics released in waste water), to name a few.

I also directly engage different blogs and media outlets to increase dissemination of our work beyond my scientific peers. For example, I wrote a piece for the ETH Zukunfts Blog (Addressing plastic pollution) and for the Swiss organization Contact Point Nano (comparing how one can use information from the field of engineered nanotechnology to understand nano- and microplastic pollution). Additionally, since becoming Assistant Professor at ETH, I have begun to use Twitter (currently approximately 1200 followers) and Linked-In posts to reach beyond my immediate scientific networks. In both cases, these social media channels have allowed me to connect with a diverse group of individuals beyond academics, ranging from non-profit organizers to policy makers.

## Oral Dissemination activities

I have been fortunate enough to be invited around the world to present my research and ideas in a variety of formats, ranging from an invited keynote speaker at important international conferences (e.g. SETAC, Gordon Research Conference), seminars at prestigious Universities and research institutes, regular platform and poster presentations at scientific conferences, and public outreach events. The diversity of the events (and therefore topics) which I present on are wide-reaching, not only to present scientific data, but also to provide context and recommendation for policy and governance. This also means that I put a significant amount of effort into developing my oral speaking skills in order to deliver key information in a targeted way depending on the audience, which eventually creates more impact and in turn leads to additional invitations to present in the future. I strongly believe that as scientists we must be good communicators to engage our peers as well as the public and regulatory bodies, and this is one of the most enjoyable parts of my job.

### *Keynote International Conference Presentations*

#### **2023**

27. Goldschmidt. Title: Embracing ecosystem complexity to understand the full impacts of microplastics pollution
26. Gordon Research Conference: Environmental Nanotechnology. Title: Embracing ecosystem complexity to understand the full impacts of nanoplastics pollution
25. International Conference of the Polymer Processing Society. Title: Considerations and implications for regulations of intentionally added microplastics in the EU.
24. IES Forum – Plastic pollution: Environmental impacts on land and sea. Title: How (micro)plastics affect soils: sources to impacts
23. UNESCO, Diving into freshwater microplastic pollution. Title: Embracing ecosystem complexity to understand the full impacts of microplastics pollution
22. European Winter Conference on Plasma Spectroscopy. Title: Measuring microplastics and nanoplastics: from analytical method development to environmental impacts

#### **2022**

21. 82<sup>nd</sup> LCA Discussion Forum, Addressing the issue of plastic pollution: status quo and the way forward. Zurich, Switzerland. Title: Nano- and microplastics policy: regulations and considerations for responsible and sustainable plastics use and development
20. Microplastics in soils – a threat for human health and the environment? Umwelt Bundesamt, Berlin, Germany. Title: Nano- and microplastics policy: Regulations for sustainable plastics use and design.
19. 15<sup>th</sup> International Conference on Environmental Effects of Nanoparticles and Nanoplastics (ICEENN), Montreal, Canada. Title: Small(er) particles, big(ger) problems? Putting environmental impacts of nano- and microplastics into context
18. Winter Plasma Conference, Tucson Arizona, USA. Title: Environmental impacts of anthropogenic particles: Nanomaterials to plastics.

#### **2021**

17. Nature Conference: Waste Management and Valorization for a Sustainable Future. Seoul, South Korea. Title: Small(er) Plastics, Big(ger) problems? Fate, Transport and Implications of Nano- and Microplastics in the Environment and associated regulatory challenges
16. 2<sup>nd</sup> International Akademie Fresenius Conference: Microplastics regulatory update, identification and risks. Virtual. Title: Microplastic regulations need to be precise to incentivize innovation and environmental safety.
15. Global Environmental Sciences Summit. Virtual. Title: Nanoplastic and microplastic removal from water: efficiency of wastewater and drinking water treatment plants.
14. Society of Environmental Chemistry and Toxicology (SETAC). Virtual. Title: Small(er) Plastics, Big(ger) problems? Fate, Transport and Implications of Nano- and Microplastics in the Environment.

#### **2020**

13. UK Circular Plastics Network and NERC: Addressing the Challenge of Microfibers – from source of production to environmental contamination. (virtual) Title: Reducing Microplastic Fibre Emissions to Waterways: From Textiles to Water Treatment Technologies



12. AIChE 2<sup>nd</sup> Engineering Sustainable Development Conference. Seoul, South Korea. Title: Small(er) particles, big(ger) problems? Fate, transport and implications of nanoplastic in the environment.
11. Nature Forum on Plastics and Sustainability. (virtual) Title: Microplastic regulations to incentivize innovation and environmental safety.
10. MICRO2020 – Fate and impacts of microplastics, knowledge and responsibilities (virtual). Title: Small(er) particles, big(ger) problems? Fate, transport and implications of nanoplastic in the environment.
9. Global Summit on Regulatory Science - Nanotechnology 2020 Title: Fate, transport and implication of nanoplastics in the environment.
8. Swiss Plastics Expo, Luzern, Switzerland. Title: Nano and microplastic fate in the environment.

**2019**

7. 17<sup>th</sup> International Conference on Chemistry and the Environment (ICCE), Thessaloniki, Greece. Title: Synthesis of metal doped nanoplastic particles and microplastic fibers and their utility for investigating plastic fluxes in complex matrices.
6. Swiss Nano Convention, Lausanne, Switzerland. Title: Synthesis of metal doped nanoplastic particles and microplastic fibers and their utility for investigating plastic fluxes in complex matrices.

**2018**

5. Nano- and Microplastics in Freshwater Systems. Ascona, Switzerland. Title: Nanoplastic and microplastic fiber analysis in wastewater and activated sludge: Synthesis and utility of metal doped plastics.
4. AI-Vets 29<sup>th</sup> Annual European Conference. Luzern, Switzerland Title: (Micro)plastics: from products to environmental distribution.
3. Joint Research Council (JRC) workshop, Microplastics – policy context and scientific gaps on possible health effects. Geel, Belgium, Title: The path of (micro)plastics to the environment: particulate plastic sources, fate and transport.

**2017**

2. 7<sup>th</sup> International Meeting of the Institute of Metals; Metallic nanoparticles: health, environment, applications and safer-by-design. Villard-de-Lans, France. Title: Applicability of comparing pristine and transformed particles to understand nanoparticle behavior and eco(toxicity).

**2015**

1. Gordon Research Conference, Environmental Nanotechnology. West Dover, VT, USA. Title: Using a life cycle approach to understand nanomaterial aging, transformation and release during use of nano-enabled products.

*Invited Presentations at Government and Policy-Making Events*

4. EU Joint Research Centre, 2<sup>nd</sup> CUSP Annual Meeting. Synthesis and characterization of metal-doped nanoplastics and their utility to investigate association with human cells. June 9, 2022.
3. All Atlantic Conference: Challenges and opportunities in monitoring the sources and pathways of Marine Debris in the Atlantic Ocean. June 2, 2021.
2. European Commission, JRC meeting on State-of-the-art of analytical methods for reliable detection of micro- and nanoplastics. Ispra, Italy. May 13, 2019
1. UK Parliament – All Party Parliamentary Group for the Polar Regions, London, United Kingdom, May 23, 2018. (Micro)plastics: From Consumer Materials to the Oceans.

*Invited Seminars at Universities and Research Institutes*

**2024**

41. Empa, Swiss Federal Institute of Materials Science and Technology. Dübendorf, Switzerland. Host: Tanja Zimmermann. When materials meet the environment: quantification and impacts of anthropogenic particles
40. University Bayreuth, Germany. Host: Christian Laforche. Embracing ecosystem complexity to understand the environmental impacts of (nano- and micro)plastics pollution
39. TU Munich, Germany. Embracing ecosystem complexity to understand the environmental impacts of

anthropogenic materials.

### 2023

38. Eawag, Swiss Federal Institute of Aquatic Science and Technology. Host: Marco Franco. Targeting high-impact journals and decision making for where to submit a manuscript
37. Trent University, Canada. Host: Doug Evans. Challenges and opportunities for measuring nano- and microplastics in complex environmental systems
36. TOFWERK, Thun, Switzerland. Host: Lyndsey Hendriks. Challenges and opportunities for measuring nano- and microplastics in complex environmental systems
35. University of Geneva, Switzerland. Host: Vera Slaveykova. Embracing ecosystem complexity to understand the full impacts of plastics pollution.
34. Leibnitz University Hannover, Hannover, Germany. Host: Leila Shafea. From source to transport to impacts: how plastics pollution affects soils.

### 2022

33. Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden. Host: Geert Cornelis. From source to transport to impacts: how plastics pollution affects soils.
32. Paul Scherer Institute (PSI), Villigen, Switzerland. Host: Markus Ammann. Title: Putting environmental impacts of nano- and microplastics in context
31. Adolf Merkel Institute, Fribourg, Switzerland. Host: Jose Berrocal. Title: Small(er) plastics, big(ger) problems? Impacts of microplastics on environmental systems
30. International Association of Environmental Analytical Chemistry (IAEAC). Host: Montserrat Filla. Title: Plastics in the environment: Understanding impacts and identifying solutions
29. ETH Zurich, Switzerland Environmental Systems Science Department bi-annual conference. Measuring environmental impacts of anthropogenic particles: nano- and microplastics
28. Swiss Academy of Sciences, Young Faculty Meeting. Bern, Switzerland Host: Fabienne Schwab. Title: Implications of plastics in the environment and paths towards sustainability
27. University Leoben, Austria. Host: Thomas Meisel. Title: New approaches to track nano- and microplastics fast and impacts: case study on plastics removal through the drinking water treatment chain.
26. Helmholtz-Zentrum Potsdam (GFZ), Germany Host: Dirk Wagner Title: Evaluating the transport of nano- and microplastics through soils

### 2021

25. ETH Zurich Inaugural Lecture Series. Host: Alex Widmer. Title: Environmental impacts of anthropogenic particles: Plastics to nanomaterials
24. University Rennes 1, Rennes, France. Host: Melanie Davranche. Title: Environmental impacts of anthropogenic particles: plastics to nanomaterials
23. University of Bern, Switzerland. Host: Moritz Bilgalke. Title: Small(er) particles, big(ger) problems? Fate, transport and implications of nanoplastics in the environment
22. University Lyon, France. Host: Mohammad Wazne. Title: Small(er) particles, big(ger)problems? Fate, transport and implications of nanoplastics in the environment
21. Institute of Science, Technology and Policy, ETH Zurich, Switzerland. Title: Microplastic regulation should be more precise to incentivize both innovation and environmental safety.

### 2020

20. University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland. Host: Felix Schmidt. Title: Small(er) particles, big(ger) problems? Fate, transport and implications of nanoplastics in the environment.

### 2019

19. Center for Environmental Hydrology, Wallingford, UK. Host: Elma Lahive. Title: Case studies on the use of metal-doped plastics to assess nanoplastic and microplastic fibers in urban and natural environments.
18. Nature Publishing Offices, London, UK. Host: Fabio Pulizzi. Title: Case studies on the use of metal-doped plastics to assess nanoplastic and microplastic fibers in urban and natural environments.
17. University of Glasgow, Glasgow, UK. Host: Susan Waldron. Title: Case studies on the use of metal-doped plastics to assess nanoplastic and microplastic fibers in urban and natural environments.
16. Helmholtz-Zentrum Geesthacht, Germany. Host: Daniel Profrock. Title: Synthesis of metal doped nanoplastic particles and microplastic fibers and their utility for investigating plastic fluxes in complex matrices.

### 2018

15. IBP Seminar Series, ETH Zurich. Host: Kris McNeil. Title: (Micro)plastics: understanding fate and distribution from consumer products to the environment.
14. BASF, Ludwigshafen, Germany. Host: Wendel Wohlleben Title: The path of nano- and microplastics to the environment: from sources to environmental consequences.
- 2017**
13. 33<sup>rd</sup> Meeting of the DECHEMA-VCI Working Party on the Responsible Production and Use of Nanomaterials. DECHEMA-Haus, Frankfurt am Main, Germany. Host: Andreas Förster Title: Importance of life-cycle based aging paradigms for nano-enhanced products: real-world test systems to identify realistic particle transformations
- 2016**
12. ETH Zurich, Host: Ruben Kretzschmar. Zurich, Switzerland. Title: Methods to characterize nanoparticle transformations: a look at the life cycle of silver-enhanced textiles.
- 2015**
11. NanoLytica at Wageningen University, Wageningen, the Netherlands. Host: Chady Stephan (Perkin Elmer). Title: Single particle ICP-MS: a nanometrology technique to characterize nanoparticle release from products and transformations in the environment.
10. University of South Australia; 2nd Annual Nanosafety Workshop. Host: Enzo Lombi. Title Tracking nanomaterials through the laundry wash cycle: release, dissolution and complexation.
- 2014**
9. ETH-Zurich; Zurich, Switzerland. Host: Dr. Detlef Gunther. Title: Aging and Transformations of Nanoparticles Relevant to Product Use.
- 2013**
8. University of Vienna; Vienna, Austria. Host: Dr. Frank von der Kammer. Title: Nanometrology Techniques for the Characterization of Nanomaterials in Complex Systems.
7. University of Gothenburg; Gothenburg, Sweden. Host: Dr. Geert Cornelis. Title: Tracking ENP Transformations using spICP-MS.
6. University Lorraine; Metz, France. Host: Dr. Davide Vignati. Title Tracking ENP Transformations using spICP-MS.
5. Eawag, Swiss Aquatic Research; Dubendorf, Switzerland. Host: Dr. Carl Isaacson. Title: Tracking ENP Transformations Using spICP-MS.
- 2012**
4. University of Birmingham; Birmingham, UK. Host: Dr. Eva Valsami-Jones. Title: Tracking transformation of silver nanoparticles using single particle (sp)-ICP-MS and flow field flow fractionation (AF4)-ICP-MS.
3. RIKILT, Institute of Food Safety; Wageningen, The Netherlands. Host: Dr. Ruud Peters. Title: Tracking transformation of silver nanoparticles using single particle (sp)-ICP-MS and flow field flow fractionation (AF4)-ICP-MS.
2. Water Desalination and Reuse Center, King Abdullah University of Science and Technology (KAUST), Thuwall, Saudi Arabia. Host: Dr. Jean Phillippe Croue. Title: Use of single particle (sp)-ICP-MS and flow field flow fractionation (AF4)-ICP-MS in the study of nanomaterials in aqueous samples.
1. Salve Regina University; Newport, Rhode Island, USA. Host: Dr. Sandor Kadar. Title: Detection of nanomaterials in the environment.

### *International Conference Presentations*

(in every instance, presenting author) \*Invited

45. Microplastics 2022: Impact of (micro)plastics on freshwater and terrestrial ecosystems. **Influence of microplastics composition and algae aggregates on particle settling rates in freshwater.** Francesco Parrella, Stefano Brizzolara, Markus Holzner, Denise M. Mitrano. November 7, 2022. (*platform presentation*)
44. Society of Environmental Chemistry and Toxicology (SETAC): Europe. **Assessment of Drinking Water Treatment Processes in Nanoplastics Removal: Laboratory-scale, Pilot-Scale and Modelling Studies.** Gerardo Pulido-Reyes, Leonardo Magherini, Carlo Bianco, R. Sethi, Urs von Gunten, Ralf Kaegi, Denise M. Mitrano May 17, 2022 (*platform presentation*)
- 43.\* American Chemical Society, Environmental Science Division Session for Early Career Awards. Denise Mitrano. **New approaches to track nano- and microplastics fate and impacts: case study on plastics removal through the drinking water treatment chain.** (*platform presentation*)
42. Society of Environmental Chemistry and Toxicology (SETAC): North America, Gerardo Pulido-Reyes, Leonardo Magherini, Carlo Bianco, R. Sethi, Urs von Gunten, Ralf Kaegi, Denise M. Mitrano. **Assessment**

- of Drinking Water Treatment Processes in Nanoplastics Removal: Laboratory-scale, Pilot-scale and Modeling Studies. November 18, 2021. (*platform presentation*)
- 41.\* MISSOURI. Microplastic regulation should be more precise to incentivize both innovation and environmental safety. Denise M. Mitrano. October 14, 2021 (*platform presentation*)
- 40.\* PerkinElmer Global Environmental Sciences Summit. Nanoplastics and microplastics removal from water: efficiency of wastewater and drinking water treatment plants. Denise M. Mitrano June 4, 2021
39. European Geophysical Union. Microplastic regulation should be more precise to incentivize both innovation and environmental safety. Denise M. Mitrano, Wendel Wohlleben. April 26, 2021. (*platform presentation*)
- 38.\* Global Research & Innovation in Plastics Sustainability (GRIPS). Fate, Transport and implications of nano- and microplastic in the environment. Denise M. Mitrano March 17, 2021 (*platform presentation*)
37. Society for Environmental Toxicology and Chemistry (SETAC): Europe. Using metal-doped plastics to assess the potential for nanoplastics and microplastic fibers to accumulate in earthworms. Elma Lahive, Richard Cross, Aafke Saarloos, Alice A. Horton, Denise M. Mitrano. Dublin, Ireland May 25, 2020 (*poster presentation*)
36. Society for Environmental Toxicology and Chemistry (SETAC): Europe. Transport of nano- and microplastic through unsaturated porous media from sewage sludge. Andreas S. Keller, Joaquin Jimenez-Martinez, Denise M. Mitrano. Dublin, Ireland May 25, 2020 (*Poster Presentation*)
35. Society for Environmental Toxicology and Chemistry (SETAC): Europe. Uptake and interactions of nanoplastics with wheat plants. Ana Elena Pradas del Real, Denise M. Mitrano, Hiram Castillo Michel, Juan Reyes Herrera, Mohammad Wazne, Geraldine Sarret. Dublin, Ireland May 25, 2020 (*poster presentation*)
34. Society for Environmental Toxicology and Chemistry (SETAC): North America. Synthesis of metal-doped nanoplastic particles and microplastic fibers and their utility for investigating plastic fluxes in complex media. Denise M. Mitrano, Stefan Frehland, Rudolf Hufenus, Anna Beltzung, Ralf Kagi. Toronto, Canada November 5, 2019. (*platform presentation*)
33. Society for Environmental Toxicology and Chemistry (SETAC): North America. Case Studies on the use of metal-doped plastics to assess nanoplastic and microplastic fibers in urban and natural environments. Denise M. Mitrano, Joaquin Jimenez-Martinez, Ana Elena Pradas del Real, Geraldine Sarret, Hiram Castillo-Michel, Ahmed Tlili. Toronto, Canada, November 5, 2019. (*poster presentation*)
32. MICRO2018: Fate and Impacts of Microplastics: Knowledge, Actions and Solutions. Trace nanoplastic and microplastic fiber analysis in wastewaters and activated sludge: Synthesis and utility of metal-doped plastics. Denise M. Mitrano, Anna Beltzung, Stefan Frehland, Michael Schmiedgruber, Alberto Cingolani, Felix Schmidt. Lanzarote, Spain. November 20, 2018. (*platform presentation*)
- 31.\* Society for Environmental Toxicology and Chemistry (SETAC): Europe 28th Annual Meeting. Trace particulate plastic analysis in wastewater: Synthesis and utility of metal doped plastics. Michael Schmiedgruber, Anna Beltzung, Felix Schmidt, Stefan Frehland, Alberto Cingolani, Denise M. Mitrano. Rome, Italy, 14 May 2018 (*platform presentation*)
30. Gordon Research Conference; Environmental Sciences: Water. Trace nanoplastic and microplastic fiber analysis in wastewaters and activated sludge: synthesis and utility of metal doped plastics. Denise M. Mitrano, Anna Beltzung, Stefan Frehland, Michael Schmiedgruber, Alberto Cingolani, Felix Schmidt. Holderness, N.H. USA 24-29 June 2018 (*poster presentation*)
29. Gordon Research Conference; Environmental Nanotechnology. Mobility of metallic (nano)particles in leachates from landfills containing waste incineration residues. Denise M. Mitrano, K. Mehrabi, Y.A.R. Dasilva and B. Nowack. Vermont, USA 18 -23 June 2017 (*poster presentation*)
28. Society for Environmental Toxicology and Chemistry (SETAC): Europe 27th Annual Meeting. Synthetic textiles as a source of microplastics from households. Denise M. Mitrano, Edgar Hernandez and Bernd Nowack Brussels, Belgium 7 – 11 May 2017 (*poster highlight presentation*)
27. Society for Environmental Toxicology and Chemistry (SETAC): Europe 27th Annual Meeting. Mobility of metallic (nano)particles in leachates from landfills containing waste incineration residues. Denise M. Mitrano, K. Mehrabi, Y.A.R. Dasilva and B. Nowack. Brussels, Belgium 7 – 11 May 2017 (*poster highlight presentation*)
- 26.\* NanoIMPACT. Mobility of metallic (nano)particles in leachates from landfills containing waste incineration residues. Denise M. Mitrano, K. Mehrabi, Y.A.R. Dasilva and B. Nowack. Monte Verita, Switzerland, 12 – 17 March 2017 (*platform presentation*)
25. NanoIMPACT. Unraveling the complexity in the aging of nano-enhanced textiles: a comprehensive sequential study on the effects of sunlight, washing and landfilling. Denise M. Mitrano, E. Lombi, Y.A.R. Dasilva and B. Nowack. Monte Verita, Switzerland, 2017 (*poster presentation*)

- 24.\* NMSA (New Tools and Approaches for Nanomaterial Safety Assessment) Conference. **Life-cycle inspired protocols for aging engineered nanomaterials: Applicability of comparing pristine and transformed particles to understand nanoparticle behavior and (eco)toxicity.** Denise M. Mitrano, Olena Oriekhova, Sophie Marie Briffa, Isabella Römer, Sylvie Motellier, Serge Stoll, Eugenia Valsami-Jones and Bernd Nowack. 6 – 9 February 2017, Malaga, Spain (*invited platform presentation*)
- 23.\* NanoSAFE. **Unraveling the Complexity in the Aging of Nano-Enhanced Textiles: a Comprehensive Sequential Study on the Effects of Sunlight, Washing and Landfilling.** Denise M. Mitrano, Enzo Lombi, Yadria Arroyo and Bernd Nowack Grenoble, France. November 8, 2016 (*invited platform presentation*)
22. 7<sup>th</sup> Late Summer Workshop of the German Water Chemistry Society. **Synthetic Textiles as a source of microplastics from households.** Denise M. Mitrano and Bernd Nowack. Haltern am See, Germany September 25, 2016 (*extended platform presentation*)
- 21.\* 11<sup>th</sup> ICEENN (International Conference on the Environmental Effects of Nanoparticles and Nanomaterials). **Unraveling the Complexity in the Aging of Nano-Enhanced Textiles: a Comprehensive Sequential Study on the Effects of Sunlight, Washing and Landfilling.** Denise M. Mitrano, Enzo Lombi, Yadria Arroyo and Bernd Nowack. Golden, CO, USA August 16, 2016 (*platform presentation*)
20. Society for Environmental Chemistry and Toxicology (SETAC): Europe 26<sup>th</sup> Annual Meeting. **Unraveling the Complexity in the Aging of Nano-Enhanced Textiles: a Comprehensive Sequential Study on the Effects of Sunlight, Washing and Landfilling.** Denise M. Mitrano, Enzo Lombi, Yadria Arroyo and Bernd Nowack. Nantes, France May 25, 2016 (*platform presentation*)
19. Society for Environmental Toxicology and Chemistry (SETAC): Europe 25<sup>th</sup> Annual Meeting. **Tracking nanomaterials through the laundry wash cycle: release, dissolution and complexation.** D.M. Mitrano and B Nowack. Barcelona, Spain May 5, 2015 (*platform presentation*)
18. American Chemical Society (ACS) National Meeting. **Tracking nanomaterials through the laundry wash cycle: release, dissolution and complexation.** D.M. Mitrano and B Nowack. Denver, CO, USA. March 24, 2015. (*platform presentation*)
17. 4<sup>th</sup> Annual NanoSAFE Conference. **Tracking nanomaterials through the laundry wash cycle: release, dissolution and complexation.** D.M. Mitrano, E Rimmele, B Nowack. Grenoble, France. November 19, 2014. (*platform presentation*)
16. American Chemical Society (ACS) National Meeting. **Transformations of silver nanoparticles relevant to product use.** D.M. Mitrano, E Rimmele, B Nowack. San Francisco, CA, USA. August 10, 2014. (*platform presentation*)
15. Gordon Research Conference; Environmental Science – Water. **Transformations of silver nanoparticles relevant to product use: washing textiles.** DM Mitrano, E Rimmele, B Nowack. Holderness, NH, USA. June 2 2, 2014. (*poster presentation*)
14. Society for Environmental Society for Environmental Toxicology and Chemistry (SETAC): Europe 24<sup>th</sup> Annual Meeting. **Transformations of Silver Nanomaterials relevant to product use: Exposure to disinfectants and washing.** D.M. Mitrano, E Rimmele, B Nowack. Basel, Switzerland. May 12, 2014 (*platform presentation*)
13. Joint US-EU nanoEHS Conference. **Aging and Transformations of Nanoparticles Relevant to Product Use.** D.M. Mitrano. Washington DC, USA. December 2, 2013. (*platform presentation*)
12. Society for Environmental Society for Environmental Toxicology and Chemistry (SETAC); Europe 23<sup>rd</sup> Annual Meeting. **Tracking transformations of silver nanoparticles using single particle (sp)-ICP-MS.** D.M. Mitrano, J.F. Ranville, A.J. Bednar, C.P. Higgins. Glasgow, Scotland. May 2013. (*poster presentation*)
11. Society for Environmental 7<sup>th</sup> International Conference on Environmental Effects of Nanoparticles and Nanomaterials (ICEENN). **Tracking transformations of silver nanoparticles using single particle (sp)-ICP-MS.** D.M Mitrano, C. Higgins, A. Bednar, JF Ranville. Banff, Alberta, Canada. September 2012. (*Extended Platform Presentation and Poster Presentation*)
10. Society for Environmental American Chemical Society, 236<sup>th</sup> National Meeting. **Use of Single Particle ICP-MS for analysis of engineered nanoparticle stability in varied media.** D.M. Mitrano, R. Reed, E. Gray, C. Higgins, JF Ranville. Philadelphia, PA, USA. August 2012. (*Platform Presentation*)
9. Society for Environmental Society for Environmental Toxicology and Chemistry (SETAC); Europe 22<sup>nd</sup> Annual Meeting/6<sup>th</sup> World Congress. **Tracking transformations of silver nanoparticles using single particle (sp)-ICP-MS.** D.M. Mitrano, C.P. Higgins, A.J. Bednar, J.F. Ranville. Berlin, Germany. May 2012. (*Poster Presentation and Poster Spotlight Platform Presentation*)
8. Society for Environmental Rocky Mountain Division: Society for Environmental Toxicology and Chemistry (RMSETAC). **Use of single particle (sp)-ICP-MS in tracking nanomaterial transformations.** D. Mitrano, C.P. Higgins, A. Bednar, J. F. Ranville. Fort Collins, CO, USA. April 2012. (*Poster Presentation*)

7. Society for Environmental Conference on Earth and Energy Research. **Tracking transformations of silver nanoparticles using single particle (sp)-ICP-MS**. D.M. Mitrano, C.P. Higgins, A.J. Bednar, J.F. Ranville. Golden, CO, USA. March, 2012. (*Poster Presentation*)
6. Society for Environmental National Meeting; Nano-Go. **Capabilities and method improvements of Single Particle (SP)-ICP-MS for the detection of inorganic engineered nanoparticles**. D. Mitrano, R. Reed, H. Pace, C.P. Higgins, P. Westerhoff, A. Bednar, J.F. Ranville. Research Triangle, NC, USA. 2012. (*Poster Presentation*)
5. National Meeting; Society for Environmental Toxicology and Chemistry (SETAC). **Capabilities and method improvements of Single Particle (SP)-ICP-MS for detection of silver nanoparticles**. D. Mitrano, H. Pace, A. Barber, C.P. Higgins, A. Bednar, J. Ranville. Boston, MA, USA. November 2011. (*Platform Presentation and Poster Presentation*)
4. Society for Environmental 15th International Symposium of Field and Flow Based Separations. **Single Particle (SP) ICP-MS and FFF-ICP-MS as powerful analytical techniques to separate silver nanoparticles** D. Mitrano, C.P. Higgins, A. Bednar, J. Ranville. San Francisco, CA, USA May 2011. (*Poster Presentation*)
3. Society for Environmental Rocky Mountain Division: Society for Environmental Toxicology and Chemistry (RMSETAC). **SP-ICP-MS and FFF-ICP-MS as powerful analytical techniques to characterize Ag nanoparticles** D. Mitrano, C.P. Higgins, A. Bednar, J. F. Ranville. Denver, CO, USA. May 2011. (*Poster Presentation*)
2. Society for Environmental National Meeting; Society for Environmental Toxicology and Chemistry (SETAC). **SP-ICP-MS and FFF-ICP-MS as powerful analytical techniques to characterize silver nanoparticles in complex media**. D. Mitrano, E. Leshner, C.P. Higgins, A. Bednar, J. Ranville. Portland, OR, USA. November, 2010. (*Platform Presentation*)
1. Society for Environmental American Chemical Society National Meeting. **Analysis of nanomaterials using field flow fractionation interfaced to inductively coupled plasma mass spectrometry**. A Bednar, R. Kigan, W. Jones, A. Kennedy, J. Steevens, D. Mitrano, J. Ranville. May, 2010. (*Platform Presentation*)

***Invited Public Outreach Presentations (selection)***

6. Café Scientifique – Zurich. July 12, 2022. Small(er) plastics, big(ger) problems?
5. Oceans plastics webinar, live Youtube broadcast, May 4, 2021. Microplastics regulations to incentivize industrial innovation and environmental safety.
4. ETH Alumni Event, Zurich, Switzerland. May 23, 2019. The path of plastics from consumer materials to the environment (and how to measure it!)
3. Plastic Pollution in Switzerland (APPOLL Forum), Basel, Switzerland. May 9, 2019
2. Public evening at Nano- and Microplastic in the Freshwater Systems Conference. Ascona, Switzerland. October 31, 2018. (Micro)plastics: From consumer Materials to the Environment.
1. ETH Alumni Event, Zurich, Switzerland, September 28, 2018 Environmental fate of (micro)plastic: elucidating processes in water-treatment facilities and agricultural soils.