Organizers

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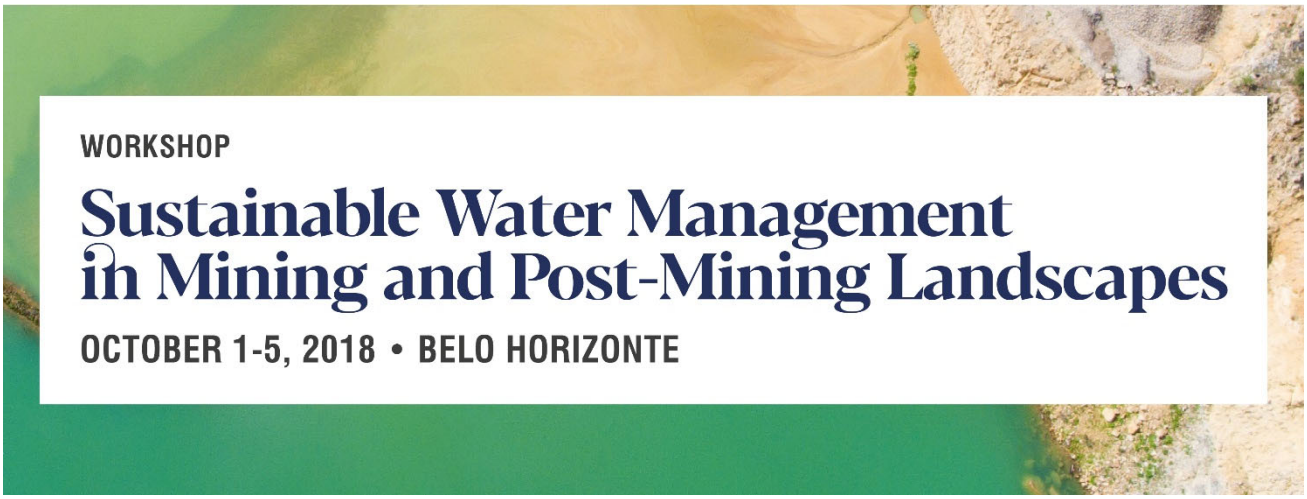

PROFILE OF THE PARTICIPANTS

- **YOUNG SCIENTISTS**

ALAA SALMA (Germany)

Alaa Salma was born in Tartus, Syria in 1980. In 2004, he graduated from Damascus University, Syria, with a Bachelor of Science degree in Applied Chemistry. Then, he received his master's degree in 2006 in Industry System Security and Environmental Management from Damascus University and Poitiers University, France. After a few years of professional experience, he returned to academia and was awarded a PhD from the Department of Instrumental Analytical Chemistry at Duisburg Essen University, Germany, under the supervision of Prof Dr Torsten C. Schmidt in 2017. Currently, he is working as a Research Scientist at German Textile Research Center North-West e.V. (DTNW) in Krefeld, Germany, and joined the polymeric nanoparticles and hybrid materials group of Prof Dr Jochen S. Gutmann at Duisburg Essen University as a postdoc. His research topics at the DTNW are environmentally friendly production and application of chemistry, surface modification of textile-based adsorbed systems, ground and surface water remediation, micropollutant removal, and recovery of resources from manufacturing processes.

ANDRÉ CAMARGO DE AZEVEDO (Brazil)

André Azevedo is a Chemical Engineer graduated from the Federal University of Rio Grande do Sul (UFRGS), MSc and DSc in Environmental Technology and Extractive Metallurgy by the Post-Graduate Program in Mining, Metallurgy and Materials Engineering (PPGE3M / UFRGS). He is currently Adjunct-Professor at the Department of Mining Engineering at UFRGS and researcher at the Laboratory of Mineral and Environmental Technology (LTM). He has experience in research projects involving water treatment for public supply and industrial effluents, with emphasis on physical-chemical processes (coagulation / flocculation), solid-liquid separation techniques (Dissolved Air Flotation-DAF and sedimentation) and

nanotechnology (generation and application of nanobubbles in advanced flotation processes). With several studies published in the last 5 years focusing on process engineering, on the removal of pollutants (sulfate ions, xanthates, amines, emulsified oils and heavy metal cations) from mining process water, aiming at water reuse or controlled disposal. He has recently worked on a research and extension project, in partnership with Nexa Resources, for the treatment of water from the beneficiation of polymetallic sulfides of the company's future mining project, for the exploration of lead, zinc and copper in the state of Rio Grande do Sul-Brazil. This work evaluated the potential of DAF on the removal of metal ions and suspended solids for water reuse in the ore beneficiation by froth flotation and may be the first case of application of DAF in the mining industry in Brazil.

ANNA CORD (Germany)

Anna Cord is a senior researcher at the Department of Computational Landscape Ecology and head of the research group “Biodiversity and Ecosystem Services”. She is also leading an interdisciplinary work package on “Trade-offs and synergies between ecosystem services” within the UFZ Topic “Ecosystems of the Future”. She has a background in ecology and remote sensing and holds a PhD in geography. Her research focuses on the analysis and modelling (in particular machine learning methods) of species distributions, habitats and ecosystem services, taking into account land use and landscape structure. In her recent work, she also investigates the trade-offs between ecosystem services (such as agricultural production) and biodiversity caused by human use of natural resources. Her research includes both conceptual work as well as case studies from regional to continental scale. In particular, she is interested in how remotely sensed information and other geospatial data can help inform decision-making and improve future capabilities of monitoring ecosystem services.

ARIETTE SCHIERZ (Germany)

Currently, Ariette Schierz is a research scientist and project manager at the Institute for Resource Ecology at the Helmholtz-Zentrum Dresden-Rossendorf. Schierz's areas of interest include environmental remediation, environmental monitoring, nanotechnology, contaminant fate, hazardous waste management and aquatic/sediment geochemistry. Her current project focusses on studying processes in repository subsystems on the nano- and the microscale, especially evaluating radionuclide migration in heterogeneous systems (clay, granite, salt) and across chemically perturbed barrier interfaces. Schierz received her PhD in Environmental Chemistry from the University of Leipzig (Germany) in 2007. In the course of her doctoral research, Schierz developed expertise in in-situ groundwater treatment. From 2008 to 2015, she worked as a research scientist to further develop her expertise in environmental remediation and water management at University of South Carolina, Duke University, The University of Texas at Austin and Texas Tech University (USA). From 2015 to 2017, Schierz was a Senior Scientist in the Biological and Ecological Science Practice at Exponent Inc. (USA). While at Exponent, she provided technical support on contaminated sites, including urban mining sites, former refineries, and other industrial sites and worked on a variety of projects, including site assessments, and natural resource damage assessments.

DIEGO PUJONI (Brazil)

Biologist and Statistician graduated by the Federal University of Minas Gerais (UFMG). PostDoc internship in the Laboratory of Limnology, Ecotoxicology and Aquatic Ecology of the Institute of Biological Sciences (ICB) of UFMG, in the area of EcologyLimnology. Data manager of the Brazilian Long-Term Ecological

Research Program (PELD-site 4). Bachelor's degree in Statistics by UFMG (2018). Master (2010) and Doctor (2015) in Ecology, Conservation and Management of Wildlife by UFMG with an emphasis in Theoretical Ecology, Numerical Ecology, Biological Data Analysis, Limnology, and Mathematical Modeling. Degree in Biological Sciences from UFMG (2007). Technician in Chemistry graduated from the Technical College of UFMG (2004). Lecturer at the State University of Minas Gerais (2015-2016), where held the position of Chief of the Department of Exact Sciences. Part (six months) of his doctorate was held at Wageningen University (Netherlands) where he developed projects in the area of Mathematical Modeling of biological systems. His research focused on the construction of stochastic and deterministic models aiming to test hypotheses about the functioning of ecosystems and biological communities in a spatiotemporal perspective. He has experience in the analysis of multivariate biological data using programming with R software.

ELLEN CRISTINE GIESE (Brazil)

Ellen Cristine Giese is a researcher at the Center for Mineral Technology (CETEM) at Extractive Metallurgy and Bioprocesses group, where coordinates projects in Biotechnology and Biohydrometallurgy. Researcher fellow of productivity in technological development and innovative extension (CNPq-DT, Brazil) since 2017, Bachelor's of Science (Chemistry) (2002), specialization in Applied Biochemistry (2004) and master's in Biotechnology (2005) at Universidade Estadual de Londrina. Doctorate in Food Science and Engineering (2008) at Universidade Estadual Paulista Júlio de Mesquita Filho (UNESP). Post-doctoral terms in Biotechnology projects at Universidad de Castilla-La Mancha (Spain, 2008-09), Lakehead University (Canada, 2009-10) and Universidade de São Paulo (2011-12). Main line of research: Biohidrometallurgy, Microbial-Mineral Biochemistry and Biotechnology, currently working on the following topics: interaction microorganism-mineral, bioleaching and biosolubilization of ores, immobilized biocatalysts and biosorption. She has published more than 35 papers in peer reviewed international journals and presented more than 90 papers in international conference proceedings. She has also recorded 3 patents on biotechnological processes.

FALK HÄNDEL (Germany)

Falk Händel studied Water Management at Technische Universität Dresden, Germany, from 2005 to 2010. His diploma thesis focused on the regional numerical modeling of heat transport in a shallow aquifer subject to possible low-enthalpy geothermal applications. In 2014, Händel finished his PhD thesis, supported by the PhD scholarship program of the German Federal Environmental Foundation (DBU), on the topic of Managed Aquifer Recharge. Here numerical studies and field tests were applied, among others to evaluate a new clean-water recharge method using cost-efficient small-diameter wells (ID 1-2”). After 2014, Händel started working at the Institute of Groundwater Management at Technische Universität Dresden as a research associate. His position encompasses teaching, mainly in the context of field exploration techniques, and further scientific works on different topics. These include Managed Aquifer Recharge, more precisely assessing clogging processes in small-diameter wells by low quality waters, heat transport simulation in porous media, but also contaminant plume length estimation using analytical models. Recent research works focused on the numerical simulation of flow and transport processes in the unsaturated zone during decentralized rain and treated wastewater infiltration. During his PhD and scientific work at Technische Universität Dresden, co-operations could be established with among others the Helmholtz-Centre for Environmental Research (UFZ), Germany; Kansas Geological Survey, KS, USA; University of Basel, Switzerland; Technion, Israel and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), WA, Australia working on the previously mentioned topics.

FLÁVIA YOSHIE YAMAMOTO (Brazil)

Flávia Yoshie Yamamoto holds a bachelor's degree in Biological Sciences at the Universidade Federal do Paraná (2009). Master's and PhD in Cell and Molecular Biology at the Universidade Federal do Paraná (2012;2016). Conducted her research at the Laboratory of Cellular Toxicology (UFPR, 2006-2016) and at the University of California, Riverside for a PhD sandwich program (9 months, 2015). She was a temporary professor of ecotoxicology, biochemistry and cell biology at the Universidade Tecnológica Federal do Paraná (2016-2018). Currently, she is a postdoctoral researcher at the Institute of Biosciences of the Universidade Estadual Paulista (UNESP, Campus Litoral Paulista) for a period of 2 years (2018-2020). Her interest is to understand the impacts of chemicals introduced into aquatic environments, especially those from human activities sources, and their effects in the biota and human populations. Her postdoctoral research is related to the assessment of the toxicity of the pollutants present in the Doce River after the collapse of Fundão tailings dam (MG, Brazil), through different biomarkers in fish. Has experience in the field of Ecotoxicology, with emphasis in Cellular and Molecular Biology, working mainly in the following subjects: pollutants, biomonitoring, aquatic ecossystems, fish, biomarkers, biochemical, morphological and molecular analysis and immunoassays.

GERDHARD JESSEN (Canada)

Gerhard Jessen completed his PhD at the Max Planck Institute for Marine Microbiology in June 2015, under the supervision of Prof Dr Antje Boetius. His work focused on the effects of permanent and temporary hypoxia on microbial communities at the Crimean Shelf (Black Sea). Although Jessen's research for understanding was applied to climate change, he understood towards the end of his PhD the need to extend his experience in applied scientific research directly into mining contexts; a key industry for both Chile and Canada. Thus, in 2017, Jessen joined Dr Lesley Warren's aqueous and microbial geochemistry research group to work specifically in environmental and reclamation management for the resource sector as a Postdoctoral Fellow at the University of Toronto. Jessen is investigating the dynamic interplay between geochemistry and microbial community structure and function on water quality at Base Mine Lake (BML), the first commercial scale demonstration pit lake (water cap tailings technology) in Canada. Over the last year at the Civil and Mineral Engineering Department, University of Toronto and the Lassonde Institute of Mining, he is performing monthly field campaigns and applying state-of-the-art techniques such as 16S rRNA gene amplicons (Archaea and Bacteria) sequencing, shotgun metagenomics, and geochemistry to identify the dynamic and interactive microbial and biogeochemical development of this pilot system and generate new knowledge that will improve environmental management for this growing and significant global anthropogenic biogeochemical reservoir. Jessen's aim is to provide new insights into the establishment and development of biogeochemical trajectories within new systems; how community metabolic capacities can serve as bioindicators of ecosystem services; and to help guide the development of biologically informed strategies for better mine wastewater stewardship.

JAMES APAÉSTEGUI CAMPOS (Peru)

Doctor in Geosciences with action area on environmental geochemistry – Paleoclimatology by the Federal University of Fluminense - Brazil. Formed in Master of Science (MSc) in Water resources management and Agricultural Engineer degree by the Agraria La Molina University – Perú. He has developed works related to environmental management of water resources oriented to climate change using hydrological models. He also conducts research programs for water resources monitoring using

geochemical tracers such as stable isotopes and trace elements. Relevant publications in peer reviews journals are related to paleoclimate reconstructions in Andean region based on stable isotopes on speleothems during the last millennium and the Holocene. He is currently working as a Senior Scientific Researcher of the Peruvian Geophysical Institute and Executive director of the new Water Science Institute held by the Pontifical Catholic University of Peru - PUCP. President of the Peruvian Speleological Group –(Espeleo Club Andino), and member of the HYBAM (Hydrology and Geodynamics of the Amazon basin) Observatory and the Paleotraces International Mixed Laboratory (LMI Paleotraces).

KELLY WHALEY-MARTIN (Canada)

Kelly Whaley-Martin is a post-doctoral fellow at the University of Toronto, Canada and her research interest and experience over the last decade has centered on applying multidisciplinary approaches to examine biogeochemical cycling in contaminated environments. This work has ranged from exploring legacy contamination in Canadian historical mining environments to groundwater arsenic contamination in rural communities across Bangladesh. Whaley-Martin holds a PhD in Earth and Environmental Science from McMaster University; a MSc is chemistry and chemical engineering from the Royal Military College of Canada and a BSc (Honours) in Biological and Earth Science from Brock University. Her current research is part of an overarching project led by Dr Lesley Warren, Professor and Director of the Lassonde Institute of Mining, to develop science-based effective and robust management protocols for mine tailings and wastewaters through combined microbial genetic and geochemical approaches. The overall aim of this research is to determine the sulphur biogeochemistry, microbial communities and metabolic repertoires within varying mine wastewaters over seasonal and annual scales that will generate new tools enabling the mining industry to better predict and mitigate adverse negative impacts to the environment.

LUCIANA BRANDÃO (Brazil)

Luciana Brandão is graduated in Biological Sciences, is Master and PhD in Ecology, Conservation and Wildlife Management by the Federal University of Minas Gerais (UFMG, Minas Gerais, Brazil). She also held a sandwich-doctorate at the University of Aarhus, Denmark, where she worked on the dynamics of carbon in aquatic ecosystems. Her research line is Limnology, with an emphasis on biogeochemical processes involving carbon cycling and organic matter, ecosystem ecology and zooplankton. She is currently a postdoctoral fellow in Ecology at UFMG, and is a member of the projects “Rio Doce Basin Recovery” and “Long-Term Ecological Research in the Middle Rio Doce”, both coordinated by Professor Francisco Barbosa. She also has experience in teaching for undergraduate and graduate studies, as a co-advisor of students of scientific initiation and master's degree, besides having participations as member of examining bank in graduation, specialization and doctoral studies. She also has scientific articles published in national and international journals of relevance in the research area. In addition to her academic experience, she works as a consultant in limnology in diagnostic projects and water quality monitoring for mining companies and hydroelectric plants.

MARIA USSATH (Germany)

Maria Ussath is a graduate geo-ecologist and works as a research assistant at the Technical University Bergakademie Freiberg at the Institute for Mining and Special Civil Engineering, Professorship Mining and Surface Mining (Prof Drebenstedt) in the research group Mining Water and Dewatering Technologies under the direction of Dr Hoth. Following her interdisciplinary study of environmental sciences at the

TU Bergakademie Freiberg (2008), she started a position at the Federal Institute for Geosciences and Natural Resources in the Department Groundwater Resources – Quality and Dynamics. As part of the technical cooperation with Zambia, she worked in Lusaka on the GReSP project. Then she took over the position of a research assistant in the Mining Water and Dewatering Technologies working group. There she works on projects on various aspects of characterization and remediation of post-mining landscapes and is involved in student teaching as well. In addition to the various aspects of acid mine drainage (AMD), her research also includes hydraulic and hydrogeochemical investigations of soil liquefaction in old lignite dumping areas. Her doctoral thesis will focus on the characterization of Chilean tailings and other deposit materials with regard to the extraction potential of strategic economic elements. In particular, the focus is on application optimization of hXRF measurements for the detection of indium and other strategic elements "in the field".

MARIELLY CASANOVA (Germany)

Marielly Casanova is a licensed architect from Venezuela (2003), she holds a Master Degree in Architecture and Urban Design from Columbia University (2009) NY, and finished her doctoral thesis called “Social Strategies Building the City: a Re-conceptualization of Social Housing in Latin America” at the University of Duisburg-Essen, Germany (2017). Casanova’s work focuses on the intersection between urban planning and social dynamics. Her main expertise and interests lie in participatory planning, co-production and co-implementation of projects of diverse nature (public space, mobility, neighborhood regeneration, informal settlements, housing and public policy). She analyzes neighborhood potentials in different contexts for the conception of urban strategies and projects that can be implemented in collaboration with local stakeholders. Currently at the Institute of City Planning and Urban Design, University of Duisburg-Essen, she teaches non-conventional research methodologies to assess urban problems and potentials in disadvantaged neighborhoods. Casanova’s previous work in research and teaching extends to Columbia University, NY and at Urban Think Tank Chair of Architecture and Urban Design, ETH Zürich. In addition, Casanova worked as a project manager and head of the department of the Public Domain Projects at the Municipality of Chacao in Caracas, Venezuela – designing, managing and implementing plans, projects, and urban regulations.

MARION MARIA STEMKE (Germany)

Marion Stemke was born in 1963. She made her high school graduation on the second educational path. From 2005 to 2010, she studied Geoscience with specialization on hydrogeology at Ruhr-University Bochum. After completing her master's degree, she worked for 15 months in the free economy in the field of mineral water exploration. From 2012 to 2017, she was a PhD student at the Ruhr-University Bochum where she was responsible for various projects in the field of mining. Her projects include a feasibility study for underground pumped storage power plants in the coal industry and the geothermal use of mine water. She obtained her PhD in January 2017. Since October 2017, she works at the Johannes Gutenberg-University Mainz as research collaborator. Stemke is working on a project that deals with the planned mine water increase in hard coal mining areas. Her main tasks are the development of an assessment matrix and the investigation of the environmental impact of the planned mine flooding. Other interests include the study of the formation and behavior of density stratification in abandoned ore mines by using underwater cameras and probes. Further topics she is interested in are feasibility studies for geothermal use of mine water in different locations (ore and coal mines) as well as the development of a new method for water balance in abandoned mines.

NADINE GERNER (Germany)

Nadine Gerner holds a diploma in biology from the University of Frankfurt and is specialized in freshwater biology and ecotoxicology. She conducted a PhD at the Helmholtz Centre for Environmental Research (UFZ) in Leipzig, where she investigated the ecological effects of the Canadian oil sands development and advanced biological indicators for aquatic macroinvertebrate species. In 2014, Nadine Gerner joined Emschergenossenschaft & Lippeverband, a public sector water management association in Essen. The restoration of the Emscher river and its tributaries is the central topic of her work. In this context, she coordinated a case and pilot study in the EU-funded research project DESSIN. In DESSIN, a framework for the evaluation of ecosystem services was developed and applied. In parallel, innovative technologies for the improvement of water quality were tested. Currently, Gerner is involved in the German research project STEER, which develops tools for improving governance regimes in water management. The aim is to facilitate Integrated Water Resources Management by resolving conflicts of interest between the involved actors and institutions. Her current research interests are on river restoration, ecosystem services and ecotoxicology. During school, Nadine Gerner spent three years in Brazil, attending the Humboldt college in São Paulo. She speaks German, English and Portuguese.

NICOLAS W. JAGER (Germany)

Nicolas W. Jager is a political scientist working in an interdisciplinary research team on the research project “Leverage Points for Sustainability Transformation”, and as a member of the Working Group on Governance, Participation, and Sustainability at Leuphana University Lüneburg, Germany. He studied at the University of Trier, Germany, and Lund University, Sweden, and holds a PhD in Political Science from Leuphana University. His research covers multiple aspects of environmental governance and institutional change, including water resources management, public participation, institutional failure, and issues of environmental policy integration and coherence. In particular, Nicolas Jager’s work is concerned with the question of ‘what works’ in environmental governance. His analyses examine the opportunities and pitfalls for sustainable development associated with different modes of environmental governance and public policymaking, and the processes and mechanisms through which these may be realized. Those inquiries span a wide spectrum of methodological approaches, including qualitative and quantitative inquiry, meta-analyses and network and configurational methods, and focus on several geographic areas, with studies conducted in Central and Eastern Europe, North America, and Africa.

PEDRO MAIA BARBOSA (Brazil)

Graduated in Biological Sciences with emphasis in Environmental Management by the Pontifícia Universidade Católica (PUC) de Minas Gerais, and PhD in Ecology by the Federal University of Rio de Janeiro. Has expertise in the field of Ecology, with emphasis in Ecosystems Ecology. Developed a part of his PhD in the University of California (Santa Barbara - UCSB), relating physical and chemical processes to the cycle of biogenic climate gases (CO2 and CH4). Currently has a post doc position in the University of California (Santa Barbara), at the Earth Research Institute, where he continues his studies regarding the biogeochemical cycle of Carbon in Amazonian floodplains, with special attention to CH4 and CO2 emissions to the atmosphere and related processes.

PEDRO VAL (Brazil)

Pedro Val is a geologist with a BSc degree from the Federal University of Amazonas (UFAM) and a Doctor in Earth Sciences from Syracuse University with postdoctoral experience at the Scripps Institution of

Oceanography, University of California, San Diego. He specialized in Tectonic Geomorphology and use cosmogenic isotopes (in-situ and meteoric) to build inventories (primarily 10Be, 26Al,14C, and 21Ne) that serve as paleo and modern proxies of erosion rates as well as chronological constraints for dating landscape features from hundreds to millions of years. The foci of his research are the interactions between tectonic, climatic, and surface processes and their individual contributions to the evolution of landscapes and the mass balance involved with a focus on mountain ranges and lowlands. In the past, he has investigated the erosional response to tectonically driven changes in base level in both Central Amazonia and the southern Central Andes. Currently, he continues to investigate the links between mountain building, tectonic processes, and climate, but future plans are to investigate environmental impacts caused by humans at the watershed scale, including changes in the geomorphology of basins, sediment export, and contaminant mobility.

ROBERT LEPENIES (Germany)

Robert Lepenies is a research scientist at the Helmholtz Centre for Environmental Research and a member of the Global Young Academy. He holds a PhD from the Hertie School of Governance, a MSc from the London School of Economics, and a MSc from the University of Oxford (The Queen's College). He works on the politics of nudging and on themes in the philosophy of the social sciences (economics), international political economy, and public policy. Currently, he is developing new projects related to the application of behavioral insights to the Sustainable Development Goals (SDGs) and on themes in water governance in the interdisciplinary environmental politics team of the UFZ. He has held post-doctoral positions at the European University Institute (Max Weber Fellowship) and at the Berlin Social Science Center (WZB). He held visiting fellowships at Yale University (Fulbright-Schuman Grant) and the FU Berlin. He taught politics at the ESCP Europe Business School Berlin and history of economic thought at the Hertie School of Governance Berlin in the Master of Public Policy program. Robert received the inaugural WIWA Young Scholars Award for Pluralism in Economics (2015), as well as the Mulert German Fulbright Association Award for Mutual Understanding (2016) and the A.SK Social Sciences Post-Doctoral Award (2016).

STÉFANO ZORZAL DE ALMEIDA (Brazil)

Stéfano Zorzal de Almeida is Doctor in Plant Biodiversity and Environment (Institute of Botany of São Paulo), Master in Plant Biology and Bachelor in Biological Sciences (Federal University of Espírito Santo) and Technologist in Environmental Sanitation (Federal Institute of Espírito Santo). I have experience in Ecology, with emphasis on Aquatic Ecology, working mainly on the following topics: diatom ecology, phytoplankton and periphyton, water quality, metacommunities and anthropogenic impact. Has special interest in the relationship between aquatic and terrestrial environments, especially in the influence of land use on aquatic ecosystems. Currently, he is a postdoctoral scholar by the Post-Graduate Program in Plant Biology (UFES), participating in the Program for Monitoring Aquatic Biodiversity of the Environmental Area I (Lowland Doce River, Espírito Santo, Brazil), studying the community of periphytic diatoms in lentic and lotic environments, and a volunteer professor at the Federal University of Espírito Santo.

VICTOR MARCHEZINI (Brazil)

Victor Marchezini is a Brazilian researcher that earned a B.A. in Social Sciences from Federal University of São Carlos in 2007 and defended his dissertation about “biopolitics of disasters” in 2013. Over the

past 14 years he has studied Sociology of Disasters in South America and recently co-edited a free e-book entitled “Reduction of Vulnerability to Disasters: from knowledge to action” which gathered chapters in English, Spanish and Portuguese. Since 2012 he has been working at CEMADEN (Brazilian center for early warning and monitoring of natural hazards) and learning about public policies, interdisciplinary and transdisciplinary methods. His main interests include root causes of vulnerability and disaster risk creation. In May 2017, he was chosen as a delegate to the UN Major Group for Children and Youth and attended the Global Platform for Disaster Risk Reduction in Mexico. Since 2018 he is in the Editorial Board of Disaster Prevention and Management.

- **SENIOR SCIENTISTS - JOINT GERMAN-BRAZILIAN SERIES “WATER AND REGIONAL DEVELOPMENT”**

ANDRE NIEMANN (Germany)

Andre Niemann has more than 20 years of professional experience in the field of sustainable water management, river basin management and ecological restoration of rivers. He is specialized in project management, planning and design in the context of all aspects of sustainable water management. Niemann follows up the development and implementation of sustainable water management strategies in more than 50 river basin catchments all over the world. He has broad experience in working with interdisciplinary teams containing further disciplines such as policy makers, economists, ecologists and other experts of related experts. Key qualifications can be found in solving water quality problems, hydrological and hydraulic questions and the development of cost-effective measures on the river basin level especially in urban situations effected by mining. He has further additional experience in all fields of environmental engineering, especially in the field of post-mining landscapes. His experience in structuring responsibilities within the participation of different authorities is another valuable qualification. Niemann has worked for UNESCO/IHP and the EU in various actions e.g. “Urban Drainage in Developing Countries” in many countries. Currently he is involved in international projects in Indonesia, Iran, Egypt, China and inside the EU. Niemann has published many articles in journals and books. Before he became Chair and Director of the Institute of Hydraulic Engineering and Water Resources Management at the University of Duisburg-Essen in 2010, he was the general manager at Dahlem Consulting Engineers in Essen, an international engineering consultant specialized in the field of sustainable water management. He was a key expert in numerous projects and activities in the field of flood protection, ecological restoration, urban drainage and combined sewer overflow treatment.

JOSÉ TUNDISI (Brazil)

José Galizia Tundisi is a retired Full Professor of the University of São Paulo, School of Engineering at São Carlos. He is a Member of the Brazilian Academy of Sciences and of the Staff of the Ecology Institute “Excellence in Ecology” in Germany. He was a member of the Scientific Committee of ILEC (Japan, 1986-2006), the Executive Vice-President of the International Council for Science (ICSU, 1999-2000), and President of the National Research Council of Brazil (1995-1999). Currently he is the President of the International Institute of Ecology, São Carlos, and the Coordinator of the UNESCO LatinAmerican Memorial Chair. Tundisi’s main research activities are: Limnology of lakes and reservoirs, Water Resources Management, and Watershed Management. He worked as a consultant in 40 countries. He received Doctor Honoris Causa Degrees from the University of Southampton, U.K. in 1998 and from the University of Engineering of Peru, in 2008, and the Brazilian Scientific Medal, Class Grand Cross, from the Brazilian government, in 1994. Tundisi has also received the Gold Medal Augusto Ruschi, from the

Brazilian Academy of Sciences; the Anisio Teixeira Prize, from the Ministry of Education of Brazil; and the Bouthros Galli Prize of the United Nations (1995). He was also awarded the Water Prize from the Conrado Wessel Foundation, in 2005, for Achievements in Science applied to Water Management.

PETER FRITZ (Germany)

Peter Fritz studied Geology at the TH-Stuttgart and began his doctoral studies in 1962 on the topic of isotope geochemistry at the University of Pisa (Italy) and obtained the Dr rer. nat. from TH Stuttgart. A postdoctoral fellowship at the Sorbonne in Paris (1965-1966) and then the University of Alberta, Edmonton, Canada (1966-1971) followed. His research and teaching focused increasingly on isotope hydrology, paleoclimatology, and the development of methods for dating groundwater in addition to aqueous geochemistry. From 1971-1987, he taught at the University of Waterloo as Assoc./Full Prof and Dept. Chairman and established the first laboratory for isotope hydrology in Canada at the University of Waterloo. In 1987, he followed an invitation from the Society of Radiation Protection (GSF) to become director for the Institute of Hydrology (1987-1992). In 1991, the German Government (Federal Ministry of Research and Technology, BMFT) offered him to become Founding and Scientific Director and CEO of the newly to be established Centre for Environmental Research (UFZ) in Leipzig. He was Honorary Professor at the University of Leipzig until his official retirement in 2004, after which the BMFT requested him to moderate Government sponsored Forestry Research (until 2010). He is Fellow of the Royal Society of Canada, the German National Academy of Sciences Leopoldina and the Polish Academy of Sciences. Since 2002 he is member and since 2008 Chairman of the Scientific Advisory board of the Zuckerberg Institute for Water Research at Ben Gurion University in Israel. Since 2002, he is Member/Honorary Member of the board of the BDZ-Training and Demonstration Centre for decentral wastewater treatment in Leipzig. Between 2011 and 2016, he was member of the governing board of “Alberta Innovation – Energy and Environment Solutions” in Edmonton and during the same period, he was Member of the Scientific Advisory Board for Nuclear Applications (SAGNA) of the International Atomic Energy Agency (IAEA) in Vienna. Since 2015, he is member of three international panels of the Inter-Academy Partnership on “Strategies for Attaining the UN Sustainable Development Goals (SDGs)”.

VIRGINIA S. T. CIMINELLI (Brazil)

Virginia S. T. Ciminelli is Professor at the Department of Metallurgical and Materials Engineering, Universidade Federal de Minas Gerais – UFMG and PI of the National Institute of Science and Technology on Minerals, Water and Biodiversity, INCT-Acqua. Member of the Brazilian Academy of Sciences, National Academy of Engineering. Foreign Member of the National Academy of Engineering (USA) and The World Academy of Sciences (TWAS). Leads partnerships with a large number of institutions in Brazil and abroad, and the industry. Over 260 publications and supervision of 54 M.Sc. and Dr. theses (concluded), and 16 post-doctoral fellows. Her research involves the application of thermodynamics and kinetics, combined with spectroscopic and microscopy techniques, to develop a mechanistic understanding of solid-liquid reactions of relevance to hydro- and electrometallurgy, and to environmental remediation and protection.

- **SPEAKERS AND FACILITATORS**

ALESSANDRO NEPOMUCENO (Brazil)

Alessandro Lucioli Nepomuceno is the Sustainability and Communication Director for Kinross Brazil, one of the biggest gold mining in the world, since 2009. During 2005 to 2008, he was the Regional HSE manager for Kinross. He also worked as HSE Manager for Rio Tinto Mining from 1998 to 2004. Alessandro has a Bachelor´s Degree in Mine Engineering from Minas Gerais Federal University, has a Specialization in Mining Safety and Environment at Centre D´Études Superieures Pour Secutité et L´Environnement Miniers École Des Mines D´Ales in France during 1992 to 1993. He also has a Master´s Degree in Bussiness Strategy and Environmental Management at Bradford University in England in 1997 to 1998.

BRITALDO SOARES FILHO (Brazil)

Britaldo Soares Filho and collaborators have developed integrated simulations of land-use changes in tropical forest regions to assess the impacts of policy scenarios on climate, river regime, carbon balance, forest fires, agriculture and forestry rents, and biodiversity. Policy applications include studies on REDD+ (Reducing Emissions from Deforestation and Forest Degradation), impacts of infrastructure development on ecosystem services, economic evaluation of forest concessions, effectiveness of Amazon protected areas, Brazil's Forest Code, the national market for trading forest certificates, low-carbon agriculture development, cattle ranching intensification, and Brazil's NDC (Nationally Determined Contributions) to climate change mitigation. Dr. Soares-Filho also coordinates the development of DINAMICA EGO software (www.csr.ufmg.br/dinamica), an environmental modeling freeware used by many scholars worldwide.

CLAUDIA PAHL-WOSTL (Germany)

Claudia Pahl-Wostl is full professor for resources management at the Institute for Environmental Systems Research (USF) in Osnabrück, Germany and visiting professor at the Global Institute for Water Security at the University of Saskatchewan, Canada. Before moving to Osnabrück she worked for more than ten years at the Swiss Federal Institute for Science and Technology, Zürich and the Swiss Federal Institute for Aquatic Science and Technology, EAWAG. Claudia Pahl-Wostl is an internationally leading scholar on governance and adaptive and integrated management of water resources and the role of social and societal learning. Her research programme builds on foundations in systems science, which explicitly acknowledge the complex and often unpredictable dynamics of the systems to be managed. In 2012, the Bode Foundation Water Management Prize was awarded to Pahl-Wostl for the pioneering interdisciplinary work on "Governance in times of change" and comparative analyses of water governance in large river basins. Recent research interests include the water-energy-food nexus and SDG implementation and social-ecological-network analysis. The interdisciplinary research team comprises scientists with diverse backgrounds in geography, regional planning, political science, agricultural economics, system science, computer science, environmental science and civil engineering.

FRANCISCO BARBOSA (Brazil)

Basic training in Natural History at Universidade Federal de Minas Gerais (1973) , Master's in Ecology and Natural Resources at Universidade Federal de São Carlos (1979) , Ph.D. in Ecology and Natural Resources and Limnology at Universidade Federal de São Carlos (1981) and Post-doctorate at Institute of

Freshwater Ecology - England (1988) . Currently is Full Professor of Ecology/Limnology at Universidade Federal de Minas Gerais, Coordinator of the especialization course in Management of Hydric Resources of the Institute of Biological Sciences at Universidade Federal de Minas Gerais. Vice-Chair of the National Research Institute on Mineral Resources, Water and Biodiversity – INCT-Acqua. Expertise in Ecology and Limnology with emphasis in Ecology and Conservation of aquatic ecosystems under the following research themes: primary productivity, phytoplankton ecology, water quality, bioremediation.

TATIANA HEID FURLEY (Brazil)

Technical Director of APLYSIA Environmental Solutions; CEO of APLYSIA Institute; Director of Brazilian Ecotoxicology Society; President of SETAC LA (Society of Environmental Toxicology and Chemistry), Tatiana is a biologist who earned her master and doctorate degree in biological oceanography from Rio Grande do Sul and São Paulo Federal University - Brazil. She has dedicated her last 28 years designing and coordinating environmental effects studies monitoring industrial effluents and aquatic ecosystems. She has clients from large industrial sectors such as oil and gas, mining, steel industry, pulp and paper, e.g. Petrobras, Vale, ArcelorMittal and Fibria, respectively. From the environmental diagnostics of industrial effluents, she began to investigate in detail the internal effluents from industries reaching the source of the environmental problems, closing the link between the "cause and effect". For the last 15 years, she has been working with mining environmental liabilities projects related to old and recent spills in soil and water resources. Between the years of 1997 and 2018, she received 15 awards for the technical quality of her environmental projects. Since 2000, Tatiana has been participating in scientific committees of international conferences, organizing environmental effects monitoring seminars and conferences, chairing and presenting tripartite projects that she had together with scientists from universities, industries and environmental agencies from Brazil, USA, Canada, UK, Spain, Italy, New Zealand, Australia.

WILFRED BRANDT (Brazil)

Mining Engineer (Brazil, 1982), postgraduate in Landscape Planning (Germany, 1991). As a consultant of UNESCO, PNUD, PNUMA (United Nations Programs) has worked with technical cooperation and training in Latin America (Brazil, Uruguay, Equator and Venezuela) and Europe (Germany). Founder and Principal of BRANDT MEIO AMBIENTE, a consulting company for social and environmental management, which works for industry, mining, power generation, oil and infrastructure companies.

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INGO WAHNFRIED (Brazil)

Ingo Daniel Wahnfried earned his bachelor degree in geology in 2003 from Universidade de São Paulo, in São Paulo – Brazil, and completed his Doctorate in Mineral Resources and Hydrogeology in 2010 at the same university. Between 2010 and 2012, he earned a scholarship from the Amazonas State research financing agency (FAPEAM) and from the Brazilian national research council (CNPq) to work as a Post-Doctoral fellow at the Geosciences Department of Universidade Federal do Amazonas (UFAM), in Manaus – Brazil. In 2012, he was hired as a Professor at the same department. Prof Wahnfried's research interests changed slightly during his career. During the undergraduate course, he worked with

groundwater recharge in urban areas, namely the city of São Paulo. During his DSc he worked with hydraulic testing and flow characterization in fractured aquifers in the State of São Paulo. During his Post-doc, he worked with the geological and hydrogeological characterization of silicified sandstone layers in a sedimentary aquifer in Manaus. Nowadays, his research is focused on aquifers in the Amazon region. The main research interests are hydrogeological and hydrochemical characterization, aquifer vulnerability assessment, groundwater use and management, assessment of geogenic groundwater contamination (mainly by arsenic, manganese and iron), quantification of aquifer recharge and of water flow between underground and surface systems.

- **STAFF**

HENNING STEINICKE (Germany)

After his diploma in Biology from the University of Halle, Germany, Henning Steinicke specialized on population biology of Neotropical amphibians and the development of conservation strategies in highly fragmented landscapes. He performed his doctoral and post-doctoral research at the Helmholtz-Centre for Environmental Research Leipzig, Germany and the University of São Paulo, Brazil. After his post-doc, Steinicke worked on the implementation of scale-sensitive conservation policies in Europe. Since 2011, he is senior scientific officer in the Department of Science-Policy-Society of the Leopoldina. Here he is mainly in charge for the co-ordination of Academy initiatives within the broad field of life sciences. This includes sometimes a scientific counseling of working groups but mainly focusses on the counseling of working groups and committees regarding an efficient advice of German policy makers. He therefore analyses the political discussions in certain fields, constantly follows the working process of Academy working groups with a perspective of the addressee and is responsible for a tailor-made writing of Academy statements, depending on the goals of current initiatives. Henning Steinicke is member in two standing committees of the Deutsche Forschungsgemeinschaft (the Permanent Senate Commission on Fundamental Issues of Biological Diversity and the Permanent Senate Commission on Animal Protection and Experimentation) and is member of the steering committee and the committee on finance of the German initiative “Tierversuche verstehen” (Understanding animal experimentation). He is further member of the Instituto Neotropical in Brazil.

JAN NISSEN (Germany)

Jan Nissen has been working as Senior Officer in the Leopoldina’s International Relations Department since August 2011. He is responsible for the coordination of bilateral activities with partners of the academy in Latin America, Africa and Israel. He also manages the secretariat of the Leopoldina’s Human Rights Committee. Nissen holds a Magister degree in political science, economic policy, and culture studies from University of Münster and a M.A. degree in public administration from Hertie School of Governance. In 2011, he completed his doctoral thesis in political science at University of Münster.

MARCOS CORTESÃO BARNSLEY SCHEUENSTUHL (Brazil)

Marcos Cortesão Barnsley Scheuenstuhl is an economist graduated in 1988 from the State University of Rio de Janeiro. He obtained his Master’s degree at the same university and later went to the Federal University of Rio de Janeiro to develop a PhD. For many years he worked at the State University of Rio de Janeiro, where he focused on Higher Education Policies and Funding of Higher Education in Latin

America. He also worked for the Inter-Union Department for Socioeconomic Studies and Statistics, where he developed studies on the Brazilian national financial system. Throughout his career he has dedicated much attention to institutional capacity building and networking. In 2000 he was invited to help organize the Office of International Affairs of the Brazilian Academy of Sciences. Within the Office he initially took responsibility over the Americas, playing a role in the structuring of the InterAmerican Network of Academies of Sciences (IANAS), where he served as Executive Director since the establishment of the network until 2010. He also served as Program Director of the Water Program of the InterAcademy Panel on International Issues (IAP), chaired by the Brazilian Academy of Sciences in the 2004-2011 period. For the last ten years he has been responsible for coordinating the interaction between the Academy and major international scientific organizations, such as the InterAcademy Parnership and the International Council for Science (ICSU). He also plays an active role in the coordination of several national programs and initiatives, most of these in the areas of Science Policy, Natural Resources, Health, Science Education, and Environmental Issues.

VITOR VIEIRA (Brazil)

Vitor Vieira holds a Bachelor's degree in International Relations from the Federal University of Rio de Janeiro (UFRJ). He was an intern at the Brazilian Academy of Sciences (2012-2014), Project Assistant at the National Academy of Medicine of Brazil (2014-2016), and since March 2017 he is back to the Brazilian Academy of Sciences, where he works as Project Assistant in the areas of International Cooperation and National Strategic Projects. In the international scenario, he has been actively engaged in the organization of major scientific meetings, such as the 2013 Conference and General Assembly of the Global Network of Science Academies – IAP (February, 2013); the World Science Forum (November, 2013); the IV General Assembly of the InterAmerican Network of Academies of Sciences – IANAS (May, 2016); and the International Workshop on Early Intervention and Diagnosis in Paediatric Neurodevelopment Defects (November, 2017). He is also involved in the coordination of several national programs and initiatives.