

CURRICULUM VITAE

LINDA STRANDE

CURRENT RESIDENCE

Linda Strande
Zürich, Switzerland
Swiss and US Citizenship

LANGUAGES

English – native language
High German – B2/C1
Swiss German – B1 (Züritüütsch)
French – A2
Spanish – A1

EDUCATION

2009	Ph.D. Civil and Environmental Engineering University of Washington , Seattle, Washington, USA Dissertation: Estrogen Transformations in Wastewater Treatment: Ammonia Oxidizing Bacteria, Nitrification, and Heterotrophic Bacteria Adviser: H. David Stensel
2005	Professional Registration : Engineer in Training, Washington State, USA
2004	M.S.E. Civil and Environmental Engineering University of Washington , Adviser: H. David Stensel
2004	M.S., University of Washington, Soils Science University of Washington , Seattle, Washington, USA Thesis: The Effect of Soil Amendments on the Symbiotic Nitrogen-fixing Relationship of <i>Alnus rubra</i> (Red alder) and <i>Frankia</i> Adviser: Sally L. Brown and Chuck L. Henry
1994	B.A., University of Washington, Mathematics University of Washington , Seattle, Washington, USA

RESEARCH INTERESTS

The overarching goal of my research is to increase scientific knowledge for the application of sustainable urban excreta and wastewater management technologies. As an engineering scientist focused in low-income countries, I always consider how fundamental research can translate into real-life implementations. To achieve this, I strive to employ a system-based approach to all areas of treatment including business models, value-chain management, and logistics, by developing knowledge of system components and how they integrate into complete systems. My philosophy throughout my research career has been to develop engineering approaches that are relevant for global applications. My background encompassing interdisciplinary degrees in engineering, science and mathematics, and wide-ranging international experiences, has provided me with a global perspective, and equipped me to research and apply environmental engineering fundamentals in complex, interdisciplinary situations.

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RESEARCH POSITIONS

Sept 2024 – Present	Head of Department, Eawag / Sandec
July 2010 – Present	Group Leader / Senior Research Scientist (Tenured since June 2015) Eawag - Swiss Federal Institute of Aquatic Science and Technology Sandec – Sanitation, Water and Solid Waste for Development Dübendorf, Switzerland
Oct 2009 – Feb 2010	University of KwaZulu-Natal, Durban, South Africa, Research Fellow in Pollution Research Group
Dec 2004 – Sept 2009	University of Washington, Seattle, Washington, USA, Research Assistant, Department of Civil and Environmental Engineering
May 2009	University of KwaZulu-Natal, Durban, South Africa, Research Fellow, Pollution Research Group
May 2006 – Aug 2006	Kyoto University, Kyoto, Japan, Visiting Researcher, Graduate School of Global Environmental Studies
April 2006	Jiuzhaigou National Park and Sichuan University, Sichuan, China, Visiting Researcher
Jan 2002 – June 2004	University of Washington, Seattle, Washington, USA, Research Assistant and Manager of the Northwest Biosolids Management Association Library, College of Forest Resources
June 2000 – Jan 2002	Washington Toxics Coalition, Seattle, Washington, USA, Information Specialist

TEACHING EXPERIENCE (current)

IHE Delft. Lecturer and curriculum development for faecal sludge management module in Master of Science programme in onsite sanitation.

EPFL. Introduction to Faecal Sludge Management MOOC. Launch May 2017.
<https://www.coursera.org/learn/faecalsludge>. >10,000 course participants.

Eawag. Curriculum development for faecal sludge management workshop in collaboration with CAWST. Delivered in Dar es Salaam, Tanzania; Durban, South Africa; Washington DC, USA; Blantyre, Malawi; Hanoi, Vietnam.

EPFL. Lecturer, Sanitary engineering in developing countries EPFL course Env 402 in SIE department ENAC faculty 2010 to present.

ETH. Environmental Sanitation Planning and Infrastructure in Developing Countries ETH course 102-0838-00L in D-BAUG department 2010 to present.

AWARDS AND RECOGNITIONS

2024	Bataafsch Foundation 11th International Steven Hoogendijk Award (ISHA)
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2023	IWA NSS (non-sewered sanitation) Chairman Recognition Award
2022	Best Paper Award Prerna Prasad, Water Summit for Global Development
2007 – 2009	United States Environmental Protection Agency (USEPA) Science to Achieve Results (STAR) Fellowship
2007	Water Environment Federation Canham Graduate Scholarship
2007	University of Washington Huckabay Teaching Fellowship
2007	Society of Women Engineers Outstanding Graduate Award
2005 – 2009	King County Research Fellowship
2004 – 2006	US National Science Foundation (NSF) Integrative Graduate Education and Research Traineeship (IGERT) Fellowship
2004	First place national engineering design competition, Water Environment Federation (WEF)

RESEARCH FUNDING

Current Funding:

- September 2024 – August 2026 Developing Environmental Wastewater-Based Surveillance in Non-Sewered Areas in Low-Income Contexts, 197,423 CHF total, PI Linda Strande, Eawag Discretionary Funding.
- March 2024 – November 2025 Sedup - Scaling efficient dewatering for urban practitioners, 150,000 chf total, PI Linda Strande, Repic Foundation
- June 2023 – May 2027. Improved Models for Safely Managed Sanitation: Stabilization of Faecal Sludge in Onsite Containment and Impact on Treatment, 700,000 CHF total, PI: Linda Strande, Swiss National Science Foundation (SNF).
- 2023 Seed Funds 93,437 CHF total. Water Hub: Development of an automated blackwater treatment unit for the Eawag Water Hub 49,456, ETH4D: Real-time monitoring for faecal sludge dewatering in Lebanon, 19,500, Water Hub Seed Fund TSS Sensor Evaluation for Blackwater Dewatering CHF 24,481.
- August 2022 – Dec 2026. Water, Behavior Change and Environmental Sanitation (WABES) Phase 2: Sustainable solutions through research, knowledge and professionalism, 398,857 CHF / 2,237,000 CHF Total, PI: Christoph Lüthi, Linda Strande project lead on faecal sludge management, Swiss Development Cooperation (SDC).
- April 2021 – March 2024. emergency sanitation backstopping mandate. 200,000 CHF / 1,000,000 CHF. Swiss Humanitarian Aid (SHA).
- January 2021 – December 2024 Water Hub in NEST: Science meets industry in the NEST building to develop and demonstrate on-site treatment technologies for water and sanitation innovation (Phase II). 371,000 CHF / 1,900,000 CHF. PI Blackwater component: Linda Strande, Eawag Discretionary Funding.

Previous Funding (since 2010):

- January 2020 – June 2022. Research into Action: Methods and Tools to Determine Quantities and Qualities (Q&Q) of Faecal Sludge for Sustainable Solutions, 171,239 CHF, PI: Linda Strande, Eawag Discretionary Funding.

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- January 2020 – December 2022. SFD Phase 3, 30,000 USD / 200,000 USD, PI: Barbara Evans, LEEDS University, Bill & Melinda Gates Foundation.
- Jan 2018 – July 2022. Water, Behavior Change and Environmental Sanitation (WABES): Sustainable solutions through research, knowledge and professionalism, 337,000 CHF / 2,600,000 CHF Total, PI: Christoph Lüthi, Linda Strande project lead on faecal sludge management, Swiss Development Cooperation (SDC).
- April 2018 – April 2022. Solid-Liquid Separation of Faecal Sludge: Understanding Governing Mechanisms for Improved Global Sanitation, 350,000 CHF, PI: Linda Strande, Swiss National Science Foundation (SNF).
- December 2017 – December 2020. Settling and Dewatering of Faecal Sludge: Building Fundamental Models for Improved Global Sanitation, 175,000 CHF, BJ Ward Student Fellowship, Linda Strande Supervisor, Eberhard Morgenroth PhD Advisor, Engineering for Development (E4D) proposal for four year PhD project.
- September 2019 – December 2019, July 2019. Faecal sludge quantities & qualities (Q&Q) in Lusaka, Zambia, 106,000 Euro, PI: Linda Strande, GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit).
- June 2016 – December 2020. Water Hub in NEST: Science meets industry in the NEST building to develop and demonstrate on-site treatment technologies for water and sanitation innovation, PI: Eberhard Morgenroth, Linda Strande project lead on faecal sludge management, 250,000 CHF / 1,415,760 CHF total, Eawag Discretionary Funding
- October 2018 – January 2019. Evaluation and Selection of FSTPs in South Asia and Sub Saharan Africa for Long-term Monitoring, 205,000 USD PI Linda Strande, Bill & Melinda Gates Foundation.
2017. Expert consulting, Port Harcourt World Bank Project 5,600 CHF; IHE Delft Development of Master's Curriculum 25,000 USD
- January 2016 – December 2016. Optimization of pathogen inactivation during anaerobic digestion treating faecal sludge in low-income countries, 10,000 CHF PI: Linda Strande, EPFL Seed Money
- June 2016 – May 2017. Faculty for the Future Post-doctoral Fellowship, 40,000 USD PI: Mi Nguyen, Linda Strande supervisor, Schlumberger Foundation
- November 2016 – May 2018. Methods of Faecal Sludge Analysis, 60,000 USD Linda Strande project lead on Sandec component, Bill & Melinda Gates Foundation
- November 2016 – March 2018. SFD Phase 2, 63,605 CHF Linda Strande project lead on Sandec component, Bill & Melinda Gates Foundation
- June 2015 – October 2016. RRR Phase 2, 20,000 Euro, Heiko Gebauer lead for Eawag, Linda Strande for Sandec, Swiss Development Cooperation (SDC)
- Jan 2015 – Dec 2017. Water and Environmental Sanitation Services for the Poor (WESSP), 270,000 CHF / 1,300,000 CHF Total, PI: Chris Zurbrugg, Linda Strande project lead on faecal sludge management, Swiss Development Cooperation (SDC)
- Nov 2014 – Oct 2015. Shit Flow Diagram baseline study, 185,000 USD / 1,000,000 USD Total, PI: Arne Panesar, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Linda Strande lead on Sandec component, Bill & Melinda Gates Foundation (BMGF)
- Sept 2014 – Aug 2016. Sludge to Energy Enterprises in Kampala (SEEK), 450,000 CHF - 300,000 CHF Symphasis, 150,000 CHF REPIC, PI Linda Strande, cofunded by Symphasis Foundation and REPIC (an interdepartmental platform of the Federal Offices SECO, SDC and SFOE)
- April 2014 – June 2014. FaME and U-ACT Video, 15,000 Euro, PI Linda Strande, European Union Water Initiative (SPLASH)
- Jan 2013 – Dec 2015. Partnership for Urban Resource Recovery (PURR), 440,000 CHF, PI: Linda Strande, Swiss State Secretariat for Economic Affairs (SECO)

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- Jan 2013 – June 2013. Economic Evaluation of Faecal Sludge Disposal Routes project (Contract 22384), 10,000 USD / 99,430 USD Total, PI: UKZN, Linda Strande project lead for Dakar data set, Bill & Melinda Gates Foundation (BMGF)
- Jan 2012 – Dec 2014. Resource Recovery and Reuse (triple R), 470,000 CHF / 3,000,000 CHF Total, Co-PI: International Water Management Institute (IWMI) and World Health Organization (WHO), Linda Strande and Chris Zurbrugg project co-lead on Sandec component, Swiss Development Cooperation (SDC)
- Jan 2012 – Dec 2014. Water and Sanitation (WASSA), 270,000 CHF / 930,000 CHF Total, PI: Chris Zurbrugg, Linda Strande project lead on faecal sludge management, Swiss Development Cooperation (SDC)
- Aug 2011 – Sept 2011. Drinking Water and Sanitation for Refugee Camps, 40,000 CHF Total, PI: Chris Zurbrugg, Linda Strande lead MEWS component, United Nations Refugee Agency (UNHCR)
- April 2011 – March 2014. Faecal Management Enterprises (FaME), 400,000 Euros, PI: Linda Strande, European Union Water Initiative (SPLASH).
- March 2011 – Sept 2012. De Dechet à Resource (DAR) Senegal, 30,000 Euros, PI: Mbaye Mbequere, Linda Strande project partner, Volkswagen Foundation
- Oct 2010 – Sept 2014. Nutrient Harvesting in South Africa (VUNA), 80,000 USD / 3,000,000 USD Total, Kai Udert and Teddy Gouden co-PI, Linda Strande project lead on hygienic and ecotoxicological aspects, Bill and Melinda Gates Foundation (BMGF)

MENTORING AND SERVICE

SUPERVISION AND MENTORING AT EAWAG

- Supervision of Research Project Managers at Eawag: Mbaye Mbèguère, Stefan Diener, Magalie Bassan, Lars Schoebitz, Moritz Gold, Barbara Jeanne Ward, Nienke Andriessen, Miriam Englund, Marius Klinger, Michael Vogel, Anik Dutta
- Supervision of PhD students: Ednah Kemboi, Natalia Montoya (ETH Switzerland), Kayla Coppens (University of Geneva Switzerland), Kelsey Shaw (University of Victoria, Canada), Nida Maqbool (NUST Pakistan), BJ Ward, Stanley Sam (ETH Switzerland), El Hadji Mamadou Sonko, Alsane Seck, Amadou Gueye (Cheikh Diop University, Senegal), Ebenezer Soh Kegne, Yaounde (University of Yaounde I, Cameroon)
- Supervision of Post-doctoral researchers: Seju Kang (2024-2026), Anne Nakagiri (2022), Juliette Ndounla, el Hadji Mamadou Sonko (2015), Mi Nguyen (2016)
- Supervision of Swiss Civil Servants and University interns and projects: Hanspeter Zöllig, Burkina Faso (2011), Josef Reiser, Senegal (2011), Benedict Borer, Switzerland (2012), Fabian Bischoff, Uganda, Guillaume Clair, Senegal, Amede Ferre, Vietnam, Nienke Andriessen, Uganda (2014), Aoife Byrne, Uganda, Katerina Brandes, Tanzania, Arief Gunawan, Bangladesh, Linus Brunner, Tanzania, Miriam Englund, Uganda, Michael Cunningham, Switzerland, Jean-David Therrien, Uganda, Seydou Guinko (Universite Joseph Fourier), Senegal (2015), Linus Brunner, Tanzania, Ruth Arnheiter, Uganda, Fritz Ziebell, Uganda, Hildemar Mendez, Tanzania (2016), Michael Reinisch, Switzerland (2017) Leila Schneider, Tanzania (2017), Kim Whett, Mirco Egloff, Switzerland (2017), Tom Howard, Switzerland (2018), Kayla Coppens, India (2018), Kelsey Shaw, Mai Thu Nguyen, Robert Tommy Hardeman, Switzerland (2021), Julian Fritzsche (Master project ETH), Maxwell

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Bergström (Internship), Benjamin Morath (Semester Project D-MAVT ETH), Irene Muscas, University of Geneva (2024), Magnus Hugentobler (Bachelor Thesis D-MAVT ETH 2023), Elia Weber (Semester Project D-MAVT ETH 2024) Josch Stricker (Civil servant 2024), Celestine Uwanyirigira (Uni Basel, 2024)

Cosupervision and / or examination committee member for Masters' Degrees: Manfred Schoger EPFL (2011), Hamath Dione, University of Dakar (2012), Cristina Fritzsche and Birge Ozel ETH (2013), Pauline Dayer ETH (2014), Amede Ferre, Adeline Mertenat, Karin Gallandat EPFL (2014), Markus Wolf, Fabian Bischoff, Aalborg University, Léa Randin, Livia Jost EPFL, (2015), Mira Bleuler, Zurich University of Applied Sciences (2016), Charles Simon, Leah Marwa, Nuhu Moto, University of Dar es Salaam (2017), Miriam Esanju, University of Dar es Salaam, Ammandip Duggal, ETH (2018), Johannes Nödel, Austria (2019), Kapanda Kapanda, University of Zambia (2020), Daniela Seitz, ETH (2021), Pavan Indireddy IHE (2021), Helena Verloo, TU Delft (2022), Anooj Ramanathan, TU Hamburg (2023), Sejal Dangi, TU Delft (2024), Natalia Montoya, EPFL (2024), Gomezyo Mhone (2026)

Mentoring of EPP and ETH4D fellows: Teddy Nakato (2012), El hadji Mamadou Sonko (2012), Ebenezer Soh Kengne (2013), Amadou Gueye (2013), Lungu Zuma (2013), Alsane Seck (2014), Amadou Gueye (2015) Pavan Indireddy (2018), Prerna Prasad (2020), Maria Isabel Amorin (2021), Nida Maqbool (2022), Anne Nakagiri (2022).

EAWAG SERVICE (recent)

Head of cluster hire Public Health committee, Member of cluster hire Search Committee 2024
Equal Opportunity Committee (EOC) 2017 to 2021, Chair of committee 2020, 2021
Participation in Cohort 2030 meetings, member of the Eawag Future Taskforce and Strategy Commission
Acting Sandec Department Head, March – April 2020
Represent Sandec at Engineering laboratory, Aquatikum, Flux, and Water Hub committees and meetings
Water Hub at NEST Core Team, 2016 to present
Eawag Partnership Program (EPP) Committee, 2019 to present
Eawag Symposium Committee, four years on organizing committee

SCIENTIFIC COMMITTEES (recent)

Member of committee: FSMA (Faecal Sludge Alliance)
Member of conference committee: FSM6, FSM5, FSM4 (Faecal Sludge Management)
Chair of conference committee: FSM3 (Faecal Sludge Management 3) conference, Hanoi Vietnam, January 2015
Member of IWA Specialist group and conference committee: NSS (Non-Sewered Sanitation)
Advisory member: SFD Promotion Initiative, GlobalSanTech, Poop Tank

REVIEWER

Journals

Chemosphere, Energy Conversion and Management, Energy Reports, Environmental Science and Pollution Research, Environmental Science & Technology, Environmental Technology, Fuel, Heliyon, Journal of Cleaner Production, Journal of Environmental Engineering and Science, Journal of Environmental Management, Journal of Environmental Quality, Journal of Water Sanitation and Hygiene for Development, Proceedings of the Institute of Civil Engineers - Water Management, Restoration Ecology, Science of the Total Environment, Scientia Agricola, Sustainability, Tropical Medicine, Water Environment Research, Water Research, Water SA, Water Science and Technology, Waterlines, Water Research

Book chapters

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Reviewed books for IWA and Practical Action Publishing

Research proposals

Reviewed proposals for Luxembourg National Research Fund, Volkswagen Foundation, RS-DFID, IRC
International Water and Sanitation Centre

Conferences

Conference Abstracts. FSM3, FSM4, FSM5, FSM6, NSS

PROFESSIONAL MEMBERSHIP

Aguasan Community of Practice, Switzerland

Faecal Sludge Management Alliance

International Water Association

WSSCC Water Supply & Sanitation Collaborative Council

PEER-REVIEWED SCIENTIFIC PUBLICATIONS

BOOK CONTRIBUTIONS

Methods for Faecal Sludge Analysis. ISBN: 9781780409122 eBook: 9781780409122 IWA Publishing, London, 2021.

- Velkushanova, K., **Strande, L.**, Ronteltap, M., Koottatep, T., Brdjanovic, D., Buckley, C. (Editor)
- Chapter 1. Setting the Stage. **Strande, L.**, Velkushanova, K., Brdjanovic, D. (Author)
- Chapter 2. Faecal sludge properties and considerations for characterization. Velkushanova, K., **Strande, L.** (Author)
- Chapter 3. Faecal sludge sample collection and handling. Koottatep, T., Ferré, A., Chapagain, S., Fakkaew, K., **Strande, L.** (Author)
- Chapter 4. Experimental design for the development, transfer, scaling-up, and optimization of treatment technologies: case studies of dewatering and drying. Ward, B.J., Septien, S., Ronteltap, M. **Strande, L.** (Author)
- Chapter 5. Estimating quantities and qualities (Q&Q) of faecal sludge at community to citywide scales. **Strande, L.**, Englund, M., Andriessen, N., Carbajal, J.P., Scheidegger, A. (Author)
- Chapter 7. Faecal sludge simulants: review of synthetic human faeces and faecal sludge for sanitation and wastewater research. Penn, R., Ward, B.J., **Strande, L.**, Maurer, M. (Author)
- Chapter 8. Laboratory procedures and methods for characterisation of faecal sludge. Velkushanova, K., Reddy, M., Zikalala, T., Gumbi, B., Archer, C., Ward, B.J., Andriessen, N., Sam, S., **Strande, L.** (Author)

Faecal Sludge Management: Highlights and Exercises. Englund, M., **Strande, L.** (Editor). ISBN 978-3-906484-70-9, Eawag: Swiss Federal Institute of Aquatic Science and Technology. 2019.

Guidelines on Sanitation and Health. **Strande, L.** (Member of the Development Committee). ISBN 978-92-4-151470-5. World Health Organization (WHO) 2018.

Resource Recovery from Waste: Business Models for Energy, Nutrient and Water Reuse in Low- and Middle-income Countries. **Strande, L.** (Book Contributor). Otoo, M., Drechsel, P. (Editors) Oxon, UK: Routledge – Earthscan, 816 pg. ISBN: 9781138016552 (hardcover) 9781315780863 (eBook), 2018.

Faecal Sludge Management: Systems Approach for Implementation and Operation. IWA Publishing, London. 2014. 432 pg. ISBN: 9781780404721 (Hardback) 9781780404738 (eBook), Book

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available in English, French, Spanish, Hindi, Marathi and Tamil, and Russian translation in preparation.

- **Strande, L.**, Ronteltap, M., Brdjanovic, D. (Editor)
- Chapter 1. The Way Forward. **Strande, L.** (Author)
- Chapter 2. Quantification, Characterization, and Treatment Objectives. Niwagaba, C., Mbéguéré, M., **Strande, L.** (Author)
- Chapter 3. Treatment Mechanisms. Bassan, M., Dodane, P.H., **Strande, L.** (Author)
- Chapter 10. Enduse of Treatment Products. Kengne, I.M., Moya, B., **Strande, L.** (Author)

REFEERED JOURNAL ARTICLES

- Sam, S.B., Niederdorfer, R., Scheidegger, A., Ward, B.J., Tembo, J., Johnson, D., Bürgmann, H., Morgenroth, E., **Strande, L.** Microbial communities in fecal sludge at city-wide scale in Lusaka, Zambia: relation to usage patterns, accumulation in containments, and treatment performance. In preparation.
- Coppens, K., **Strande, L.**, Stoll, S. The performance of a full-scale vermifilter for domestic wastewater treatment: A case study in Geneva, Switzerland. In preparation.
- Vogel, M., Bergström, M., JahJah, R.A., Hankache, C., Touma, R., **Strande, L.** Comparing total suspended solids sensors for improved dewatering of wastewater from non-sewered sanitation. Journal of Environmental Management, Submitted August 2024.
- Kapanda, K., Sam, S., Andriessen, N., Ward, B.J., **Strande, L.**, Tembo, J.M. Metrics for stabilization of fecal sludge, and relation to dewatering metrics. Journal of Water, Sanitation & Hygiene for Development, 14 (5), 389-399, 2024.
- Strande, L.** Integrating Recent Scientific Advances to Enhance Non-Sewered Sanitation in Urban Areas. Nature Water, 2, 405–418, 2024.
- Maqbool, N., Sam, S.B., Khan, S.J., **Strande, L.** Biomethane potential of fresh and stored fecal sludge, food waste, and relation of organic fractions to biogas production. Journal of Water, Sanitation & Hygiene for Development, 14 (3): 277–290, 2024.
- Strande, L.**, Evans, B., von Sperling, M., Bartram, J., Harada, H., Nakagiri, A., Nguyen, V.-A. Urban Sanitation: New Terminology for Globally Relevant Solutions? Environmental Science & Technology, 57, 42, 15771-15779, 2023.
- Sam, S.B., Morgenroth, E., **Strande, L.** From feces to fecal sludge: the influence of diet, organic fractions, cations, and stabilization on dewatering performance. Journal of Water Sanitation and Hygiene for Development, 13(9), 699-710, 2023.
- Andriessen, N., Appiah-Effah, E., Browne, S.J.I., al Jahjah, R., Kabika, J., Kinobe, J.R., Korir, N., Nishimwe, P., Niwagaba, C.B., Pradeep, R., Prasad, P., Tembo, J.M., William, A., Ambuehl, B., **Strande, L.** Quantities and qualities of faecal sludge: Experiences from field implementation with a Volaser in 7 countries during a pandemic. Frontiers in Water, 5, 1130081, 2023.
- Ward, BJ, Nguyen, MT, Sam, SB, Korir, N., Niwagaba, C., Morgenroth, E., **Strande L.** Particle size as a driver of dewatering performance and its relationship to stabilization in fecal sludge. Journal of Environmental Management Vol 326, 116801, 2023
- Sam, S.B., Ward, B.J., Niederdorfer, R., Morgenroth, E., **Strande, L.** Elucidating the role of extracellular polymeric substances (EPS) in dewaterability of fecal sludge from onsite sanitation systems, and changes during anaerobic storage. Water Research Vol 222, 2022.
- Shaw, K., Vogel, M., Andriessen, N., Hardeman, T., Dorea, C., **Strande, L.** Towards globally relevant, small-footprint dewatering solutions: Optimal conditioner dose for highly variable blackwater from non-sewered sanitation. Journal of Environmental Management Vol 321, 2022.

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- Prasad, P., Andriessen, N., Moorthy, A., Das, A., Coppens, K., Pradeep, R., **Strande, L.** Field-testing of methods for the estimation of quantities and qualities (Q&Q) of faecal sludge in Sircilla, India. *Journal of Water, Sanitation and Hygiene for Development* 2021.
- Ward B.J., Andriessen N., Tembo J.M., Kabika J., Grau M., Scheidegger A., Morgenroth E., and **Strande L.** Predictive models using cheap and easy field measurements: Can they fill a gap fecal sludge monitoring and process control? *Water Research* 2021.
- Narayan, A.S., Marks, S.J., Meierhofer, R., **Strande, L.**, Tilley, E., Zurbrugg, C., Lüthi, C. Advancements in and Integration of Water, Sanitation and Solid Waste in Low and Middle Income Countries. *Annual Review of Environment and Resources* 2021.
- Bleuler, M., Gold, M., **Strande, L.**, Schönborn, A. Pyrolysis of Dry Toilet Substrate as a Means of Nutrient Recycling in Agricultural Systems: Potential Risks and Benefits. *Waste and Biomass Valorization* 2021.
- Englund, M., Carbajal, J.P., Ferré, A., Bassan, M., Vu, T.H.A., Nguyen, V.A., **Strande, L.** Modelling quantities and qualities (Q&Q) of faecal sludge in Hanoi, Vietnam and Kampala, Uganda for improved management solutions. *Journal of Environmental Management*, 261, 2020, 110202.
- Peal, A., Evans, B., Sangaralingam, A., Ban, R., Blackett, I., Hawkins, P., Schoebitz, L., Scott, R., Sleight, A., **Strande, L.**, Roda, O. Estimating safely managed sanitation in urban areas; lessons learned from a global implementation of excreta-flow diagrams, *Frontiers in Environmental Science*, 31 January 2020.
- Ward, B.J., Gueye, A., Diop, B., Traber, J., Morgenroth, M., **Strande, L.** Evaluation of conceptual model and predictors of faecal sludge dewatering performance in Senegal and Tanzania. *Water Research*, 167, article 115101, 2019.
- Fischer, M., Nguyen, M., **Strande, L.** Context matters: horizontal and hierarchical network governance structures in the Vietnamese sanitation sector. *Ecology and Society*, 24 (3):17 2019.
- Andriessen, N., Ward, B.J., **Strande, L.** To char or not to char? Review of technologies to produce solid fuels for resource recovery from faecal sludge. *Journal of Water, Sanitation and Hygiene for Development*, 9 (2): 210-224 2019.
- Gold, M., Bleuler, M., Cunningham, M., Arnheiter, R., Schönborn, A., Niwagaba, C., **Strande, L.** Operating parameters for three resource recovery options from slow-pyrolysis of faecal sludge. *Journal of Water, Sanitation and Hygiene for Development*. August 8:4, 707-717 2018.
- Strande, L.**, Schoebitz, L., Bischoff, F., Ddiba, D., Niwagaba, C. Methods to reliably estimate faecal sludge quantities and qualities for the design of treatment technologies and management solutions. *Journal of Environmental Management*. 223:1, 898-907 2018.
- Roni, P., Ward, B.J., **Strande, L.**, Maurer, M. Review of synthetic human faeces and faecal sludge for sanitation and wastewater research. *Water Research* Apr 1;132, 222-240 2018.
- Gold, M., Harada, H., Therrien, J.-D., Nishida, T., Cunningham, M., Semiyaga, S., Fujii, S., Niwagaba, C., Dorea, C., Nguyen, V.-A., **Strande, L.** Cross-country analysis of faecal sludge dewatering. *Environmental Technology* Sep 12, 1-11 2018.
- Schoebitz, L., Bischoff, F., Lohri, C.R., Niwagaba, C., Siber, R., **Strande, L.** GIS analysis and optimization of faecal sludge logistics at city-wide scale in Kampala, Uganda. *Sustainability* 9:2, 194-2017.
- Gold, M., Sekigongo, P., Ddiba, D., Seck, A., Niwagaba, C., Diene, A., Diaw, S., Niang, S., **Strande, L.** Faecal sludge as a solid industrial fuel: A pilot-scale study. *Journal of Water, Sanitation and Hygiene for Development* 7:2, 243-251 2017.
- Gueye, A., Mbeguere, M., Niang, S., Diop, C., **Strande, L.** Novel plant species for faecal sludge drying beds: Survival, biomass response and forage quality. *Ecological Engineering*. 94, 617-621, 2016.

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- Gold, M., Dayer, P., Faye, C., Clair, G., Seck, A., Niang, S., Morgenroth, E., **Strande, L.** Locally produced natural conditioners for dewatering of faecal sludge, *Environmental Technology* April 17, 1-13, 2016.
- Bischel, H., Oezel, B., **Strande, L.**, McArdell, C., Udert, K., Kohn, T. Pathogens and pharmaceuticals in source-separated urine in eThekweni, South Africa. *Water Research*, 85, 57-65, 2015.
- Bassan, M., Mbéguéré, M., Koné, D., Holliger, C., **Strande, L.** Success and failure assessment methodology for wastewater and faecal sludge treatment projects in low-income countries. *Journal of Environmental Planning and Management*, 58 (10) 1690-1710, 2015.
- Udert, K.M., Buckley, C.A., Etter, B., McArdell, C., Kohn, T., **Strande, L.**, Hug, A., Wächter, M., Zöllig, H. Technologies for the treatment of source-separated urine in eThekweni. *Water SA*, 41 (2) 2015.
- Seck, A., Gold, M., Niang, S., Mbéguéré, M., Diop, C., **Strande, L.** Technology development of unplanted drying beds for resource recovery from faecal sludge: fuel production in Sub-Sahara Africa. *Journal of Water Sanitation and Hygiene for Development*, 5 (1) 72-80, 2015.
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INVITED PRESENTATIONS AND CONFERENCE PROCEEDINGS (since 2015)

Strande, L. Invited public lecture. Urban Non-sewered Sanitation: Integrating Recent Advancements for Globally Relevant Solutions. TU Delft September 2024.

Strande, L. Session organizer. 'Is failure a key step in mainstreaming technology innovation?' World Bank, Bill&Melinda Gates Foundation, Water for People, Sanivation, University of Western Australia, Eawag. Stockholm World Water Week, August 2024

Strande, L. Podium presentation. How sanitation can help meet the global methane pledge. Stockholm World Water Week, August 2024

Strande, L. Podium presentation. Fecal sludge management, the beginning or end of an era in terminology? 34th SuSanA Meeting, Stockholm August 2024

Strande, L. Podium presentation. Integrated Approach to Estimating Greenhouse Gas Emissions 34th SuSanA Meeting, Stockholm August 2024

Strande, L. The Importance of Language in the Sanitation Sector. Eawag World Toilet Day Discussion, November 2023.

Strande, L. From Toilets to Treatment: The Importance of Terminology. CSE World Toilet Day Webinar, November 2023.

Vogel, M., **Strande, L.** Piloting an automated, modular in-building blackwater dewatering unit for dense urban areas. IWA Non-Sewered Sanitation Conference, Johannesburg, South Africa 15-18 October, 2023.

Andriessen, N., Vogel, M., Ramanathan, A., Verloo, H., **Strande, L.** Treatment of supernatant from dewatering of faecal sludge with a moving bed biofilm reactor (MBBR). IWA Non-Sewered Sanitation Conference, Johannesburg, South Africa 15-18 October, 2023.

Vogel, M., **Strande, L.** Low-cost and low-footprint dewatering of blackwater with flocculants. IWA Non-Sewered Sanitation Conference, Johannesburg, South Africa 15-18 October, 2023.

Sam, S., Morgenroth, E., **Strande, L.** The role of constituents in fecal sludge and stabilization on dewatering performance. IWA Non-Sewered Sanitation Conference, Johannesburg, South Africa 15-18 October, 2023.

Kemboi, E., Ward, B.J., Morgenroth, E., **Strande, L.** Small particles drive poor dewatering in fecal sludge. IWA Non-Sewered Sanitation Conference, Johannesburg, South Africa 15-18 October, 2023.

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Bogati, N., Maqbool, N., Khan, S.J., **Strande, L.** Biomethane potential of fresh and stored fecal sludge, food waste and relation of organics to biogas production. IWA Non-Sewered Sanitation Conference, Johannesburg, South Africa 15-18 October, 2023.

Shaw, K., Dorea, C., **Strande, L.** Characterizing Biodegradation in NSS: Field Sampling, Microbiological Analysis, and In Situ Greenhouse Gas Measurements. IWA Non-Sewered Sanitation Conference, Johannesburg, South Africa 15-18 October, 2023.

Coppens, K., Stoll, S., **Strande, L.** Performance of a full-scale vermifilter for domestic wastewater treatment in Geneva, Switzerland. IWA Non-Sewered Sanitation Conference, Johannesburg, South Africa 15-18 October, 2023.

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Ward, B.J., **Strande, L.** Sludge Snap: Easily predicting sludge characteristics using photos and machine learning. WaterJAM 2023 Technical Program, Virginia Beach Convention Center, September 11-14, 2023.

Strande, L., Research Update: Technologies for Faecal Sludge Management, *invited* presentation. Aguasan meeting N°156, Bern Switzerland March 2023

Strande, L., High Level Symposium, *invited* presentation. FSM7 Abidjan, Ivory Coast 19-23 February 2023.

Strande, L., Andriessen, N., Vogel, M., Applied research for scaling up low-footprint, community-scale faecal sludge treatment solutions. FSM7 Abidjan, Ivory Coast February 2023

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Vogel, M., **Strande, L.** Sensors for off-grid dewatering of blackwater. Poster presentation. 4RI Sensor Marketplace, Dübendorf September 2022

Vogel, M., **Strande, L.** Dewatering of Blackwater, the Missing Link for Integrated Off-Grid Solutions. Podium presentation. Eawag Symposium, Dübendorf September 2022

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Strande, L. Innovations in Faecal Sludge Management, *invited* presentation. WESTalk Seminar Series. Online/Vancouver CA, March 2021

Strande, L., Reflections on Global Sanitation, *invited* presentation. WRC Seminar, Global Sanitation Developments - Recognising Heroes and Legends. Online/Durban SA, March 2021

Strande, L., Participant in *invited* panel discussion "Sanitation Targets of SDG 6.2: Thinking goes beyond piped sewers" India Sanitation Conclave, Online/New Dehli India, November, 2020.

Strande, L., Participant and *invited* presentation, Joint Monitoring Program (JMP) Expert Group Meeting on Safe Management of On-site Sanitation (SMOSS). Online, March 2020.

Sam, S., Ward, B.J., Morgenroth, E., **Strande, L.** Water Hub @ NEST: Blackwater. Eawag Symposium Duebendorf, Switzerland, Poster Presentation, 2019. First place, best student presentation.

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- Moisture content: Solving the Achilles heel of faecal sludge treatment and processing options. *Faecal Sludge Management – FSM5*, Cape Town, Workshop, South Africa, February 2019.
- Characterisation and Quantification of Faecal Sludge. *Faecal Sludge Management – FSM5*, Cape Town, Workshop, South Africa, February 2019.
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- Ward, B.J., Sam, S.B., Morgenroth, E., **Strande, L.** Water Hub @ NEST: Faecal Sludge Dewatering for Resource Recovery. Eawag Symposium, Duebendorf, Switzerland, Podium Presentation, 2018. First place, best student presentation.
- Strande, L.** Fäkalschlamm-Management für die Ressourcenrückgewinnung in Entwicklungsländern. Eawag Infotag, Duebendorf, Switzerland, 2018.
- Ward, B.J., Morgenroth, E., **Strande, L.** Water Hub @ NEST: Faecal Sludge Dewatering for Resource Recovery. Eawag Symposium, Duebendorf, Switzerland, Poster and Flash Presentation, 2017. First place, best student presentation.
- Ward, B.J., **Strande, L.** End use and resource recovery from faecal sludge – focusing on solid fuels. *Beyond development aid: Sanitation financing & revenue models in reuse (human) waste. Organised by Institute of Fiscal Studies (IFS), UK & WASTE, Netherlands.* The Hague, Netherlands, Podium Presentation, 2017.
- Gueye, A., Mbéguéré, M., Diop, C., Niang, S., **Strande, L.** Is it Possible to Continually Produce Fodder on Planted Drying Beds Treating Faecal Sludge? *Faecal Sludge Management – FSM4, Chennai, India* Podium Presentation, 2017.
- Strande, L.** Engineering Design Approach for Selection and Design of Treatment Technologies. *Faecal Sludge Management – FSM4, Chennai, India* Podium Presentation, 2017.
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- Strande, L.** Faecal sludge quantification and characterization. Faecal Sludge Characterization and Quantification Workshop, University of Kwa-zulu Natal. *Faecal Sludge Management – FSM4, Chennai, India* Podium Presentation, 2017.
- Gold, M., Bäuerl, M., **Strande, L.** Faecal Sludge Management - Research into Practice. Kampala WASH Symposium, Kampala, Uganda, Side event June 2016
- Strande, L.**, SFD: Paving the way for FSM in Kampala, co-convened with GIZ, Kampala WASH Symposium June 2016
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- Strande, L.**, FS Management - Bumps along the Way to Roadmaps for Cities Africa and Asia in session Livable Cities for All: Integrated Sanitation and Water Services, event at Stockholm World Water Week. Co-convened with The World Bank Group and Water and Sanitation Program, Bill & Melinda Gates Foundation, and Eawag, Podium presentation 2015.
- Strande, L.**, SFD – a tool to foster sustainable urban sanitation programming, event at Stockholm World Water Week. Co-convened with Bill & Melinda Gates Foundation; CSE, Eawag, GIZ, University of Leeds, Loughborough University, The World Bank Group and Water and Sanitation Program, and Eawag, Session Moderator 2015.
- Strande, L.**, SFD Discussion in session Sustainable City Sanitation - from planning to implementation, event at Stockholm World Water Week. Co-convened with Eawag and WSSUP, 2015.
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- Niwagaba, C., Ddiba, D., Sekigongo, P., Gold, M., **Strande, L.** Faecal Sludge as Fuel in Industrial Kilns for Brick Production. *Faecal Sludge Management – FSM3, Hanoi* Podium Presentation, 2015.
- Sonko, E.h-M., Mbéguéré, M., Diop, C., Niang, S., **Strande, L.** Impact of Sludge Characteristics on Planted Drying Bed Performance. *Faecal Sludge Management – FSM3, Hanoi* Podium Presentation, 2015.

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- Schöbitz, L., Saul, C., Virard, G., Gold, M., **Strande, L.**, Gebauer, H. Scaling-up sanitation businesses in low- and middle-income countries. *Faecal Sludge Management – FSM3, Hanoi* Podium Presentation, 2015.
- Panuvatvanich, A., Khongsricharoen, P., **Strande, L.**, Koottatep, T. Nitrogen transformations in different layers of vertical flow constructed wetland (VFCW) treating faecal sludge. *Faecal Sludge Management – FSM3, Hanoi* Podium Presentation, 2015.
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- Doll, C., Larsen, T.A., **Strande, L.**, Udert, K., Morgenroth, E. Water Hub - Eine Plattform zum Testen von innovativen ressourcenorientierten Sanitärsystemen, Aqua und Gas 2020
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Turyasiima, D., Gold, M., Englund, M., Niwagaba, C.B., Studer, F., **Strande, L.** Dewatering of faecal sludge using geotextiles 2016

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Brandes, K., Schoebitz, L., Kimwaga, R., **Strande, L.** SFD Report, Dar es Salaam Tanzania: Sanitation service delivery context analysis and mapping of excreta flows along the sanitation service chain and throughout the city. Eawag/Sandec, October 2015

CURRICULUM VITAE

LINDA STRANDE

- Sonko, E.h.M., Zurbrügg, C., **Strande, L.** Etude sur l'état initial de l'assainissement et le dimensionnement d'une Station de Traitement des Boues de Vidange (STBV) à Bignona et Tenghory Transgambienne October 2015
- Guinko, S., Schöbitz, L., Sonko, E.h.M., Zurbrügg, C., **Strande, L.** Market Driven Approach to Faecal Sludge Endproducts in Bignona and Tenghory Transgambienne, Senegal September 2015
- Byrne, A., Gold, M., Turyasiima, D., Getkate, W., Niwagaba, C., **Strande, L.** Suitable Biowastes for Energy Recovery, Eawag/Sandec. June 2015
- Therrien, J.-D., Gold, M., Harada, H., Dorea, C., **Strande, L.** Methods for Characterization of Faecal Sludge Dewaterability. 2015
- Schoebitz, L., Niwagaba, C., Nguyen, V.A., H.H. Tran, T.H. Dang, C. Zurbrügg, **Strande, L.** Resource, Recovery and Reuse Project. From Research to Implementation. Component 4 - Technology Assessment. Bangalore, India; Hanoi, Vietnam; Kampala, Uganda, Lima, Peru. March (2015)
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INTERNATIONAL EXPERIENCE

RESEARCH COLLABORATIONS *(since 2010, external to ETH Domain)*

- 500B (Nepal)
- Asian Institute of Technology (AIT, Thailand)
- BioBurn AG (Switzerland)
- Bremen Overseas Research and Development Association (BORDA, Tanzania and Global)
- Centre for Dewats Dissemination Society (CDD Society, Bangalore, India)
- Chiekh Anta Diop University (Dakar, Senegal)
- Center for Energy, and Energy Conservation (CREEC, Kampala, Uganda)
- Centre for Science and Environment (CSE, India)
- CubeX (Lebanon)
- Delvic Sanitation Initiatives (Delvic, Senegal)
- Environmental and Public Health Organization (ENPHO, Nepal)
- eThekwini Municipality (Durban, South Africa)
- GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit, Germany)
- Goal (Sierra Leone)
- Hanoi University of Civil Engineering (HUCE, Vietnam)
- hydrophil IC (Austria)
- IHE (Netherlands)
- INDEQUI (Guatemala)
- International Centre for Water Management Services (CEWAS, Switzerland)
- International Water Management Institute (IWMI, Sri Lanka)
- Kyoto University Graduate School of Global Environmental Studies (GSGES, Japan)
- Makerere University (Kampala, Uganda)
- MOSAN (Guatemala)
- National Sanitation Utility of Burkina Faso (ONEA)
- National Sanitation Utility of Senegal (ONAS)
- National Water and Sewerage Corporation (NWSC, Uganda)
- Sanergy (Kenya)
- Sanivation (Kenya)

CURRICULUM VITAE

LINDA STRANDE

Swiss Tropical and Public Health Institute (Swiss TPH, Switzerland)
Tribecraft AG (Switzerland)
University of Dar es Salaam (Tanzania)
University of Leeds (England)
University of Victoria (Canada)
University of Yaounde I (Cameroon)
University of Zambia (Lusaka, Zambia)
Virginia Commonwealth University (USA)
WASH R&D Centre (Formerly Pollution Research Group, Durban, South Africa)
Waste Enterprisers (Mombasa, Kenya)
WEDC/Loughborough University (England)
Water Sanitation Programme (WSP) of the World Bank
World Health Organization (WHO, Switzerland)
Z_GIS, University of Salzburg (Austria)
Zürcher Hochschule für Angewandte Wissenschaften ZHAW (Wädenswil and Winterthur, Switzerland)
Zürcher Hochschule der Künste ZHdK (Zurich, Switzerland)

WORK/TRAVEL EXPERIENCE

American Samoa, Australia, Austria, Botswana, Burkina Faso, Cameroon, Canada, China, Colombia, Croatia, Cuba, England, France, Germany, Ghana, Greece, Hungary, India, Ireland, Italy, Ivory Coast, Japan, Kenya, Laos, Lesotho, Malawi, Mexico, Morocco, Mozambique, Nepal, Netherlands, New Zealand, Portugal, Rwanda, Senegal, Serbia, South Africa, Scotland, Sierra Leone, Spain, Swaziland, Sweden, Switzerland, Tanzania, Thailand, Uganda, USA, Vietnam, Western Samoa, Zambia, Zimbabwe
