

Curriculum Vitae

Lee E. Voth-Gaeddert
PhD, PE, REHS, ASEP

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Google Scholar: <https://scholar.google.co.in/citations?user=1jMQh4UAAAAJ&hl=en&oi=ao>

SUMMARY

I currently hold research affiliations at three institutions, I am the Co-Founder of GHE, and I am a consultant for the United Nations. I completed my post-doctoral training at Tufts University and Wits University in South Africa and have four years of experience as a principal investigator (PI) at the Centers for Disease Control and independently. I have won multiple grants and contracts as PI including scoring in the top 1% on a NIH R01 as co-PI. I have published 26 peer-reviewed articles, I have an h-index of 8, and have given 65 conference presentations. I continue to publish in my research areas using methods I have learned in my PhD, post-docs, and private sector experience. In addition, I am an Early Career Board Member for the Journal of Environmental Engineering (ASCE), actively contribute as a reviewer to journals in my fields, and actively participate in professional societies. Finally, I am licensed as a Professional Engineer (PE), certified as a Registered Sanitarian by NEHA (REHS), and certified as a Systems Engineer by INCOSE (ASEP).

CURRENT APPOINTMENTS

Assistant Research Professor

Biodesign Center for Health through Microbiomes, Biodesign Institute, Arizona State University

Honorary Researcher

Wits/MRC Developmental Pathways for Health Research Unit, Department of Paediatrics and Child Health, School of Clinical Medicine, University of the Witwatersrand, Johannesburg, South Africa

Research Scientist

Center for Research in Indigenous Health, Wuqu' Kawoq | Mayan Health Alliance, Chimaltenango, Guatemala

Co-Founder and Director

Global Health Engineering (GHE), USA

International Genomics Consultant

Food and Agriculture Organization of the United Nations, Jakarta, Indonesia

EDUCATION

2017-8	Post-grad	Global Health Engineering Tufts University, Medford, MA
2017	Post-grad	Paediatrics and Child Health University of the Witwatersrand, Soweto, South Africa
2017	PhD	Environmental Engineering Missouri University of Science and Technology, Rolla, MO
2014	MS	Environmental Engineering

2012 BS Missouri University of Science and Technology, Rolla, MO
Civil Engineering
 Missouri University of Science and Technology, Rolla, MO

AWARDED GRANTS

National Institutes of Health, R01	12/22-11/27	\$2,494,000
Aflatoxin Exposure, Gut Microbiome, and Child Growth in Guatemala		Co-PI
Food and Agriculture Organization of the United Nations	4/22-12/23	\$125,000
Using Nanopore in Evaluating Antimicrobial Resistance in Probiotics		PI
Love City Strong Inc.	3/22-12/22	\$35,000
Water Treatment Framework and Decision Support Tool, Small Islands		PI
Measurement Hub, Emerging Tech for Child Development	10/21-6/22	\$7,000
Computer Vision on Google Street View Images for Child Exposures		Recipient
Ministry of Water and Environment, Republic of Uganda	8/21-7/22	\$250,000
Uganda National Water Tariff Modeling and Policy Revision		Co-PI (transferred)
Love City Strong Inc.	10/20-12/21	\$30,000
Low-Cost Water Treatment Technology Development, USVI		PI
IEEE Humanitarian Activities Committee	12/20-8/21	\$5,000
CWSMap: Water System Mapping to Improve Rural Water		PI
Global Challenges Research Fund: Networking Grant	11/20-12/21	\$25,000
Machine Learning to Map Factors of Child Malnutrition in LMIC		Co-I
Bill and Melinda Gates Foundation	3/20-2/22	\$100,000
A platform to improve safety of WASH facilities in South Africa		Co-I
Food and Agriculture Organization of the United Nations	8/19-4/21	\$150,000
Integrating Nanopore in National Antimicrobial Resistance Surveillance		PI
Tufts Clinical/Translational Science Institute	3/18-8/19	\$45,000
Development of an Environmental AMR Monitoring System with Nanopore;		Co-I
Tufts Institute of the Environment	1/18-6/18	\$8,000
Molecular Monitoring for Environmental Pathogens and Resistance Genes;		Co-I
NIH D43 Post-Doctoral Training Grant	8/17-7/18	\$5,000
Project #3D43TW009377-01A1S1, Global Health Research		Post-Doc Program
Centre of Excellence in Food Security, South Africa	5/17-9/17	\$5,000
Infectious Diseases, Microbiome, and Enteric Dysfunction in Malnutrition		Post-Doc Program
US Peace Corps Guatemala	11/16-3/17	\$13,000
Contributing factors to child stunting in Guatemala		PI

Conflict and Development Foundation , Texas A&M Evaluation of factors attributed to child stunting in Guatemala	8/16-7/17	\$10,000 Co-PI
US Peace Corps ; Development Alternatives Inc. Assessment of Water, Sanitation, and Fungal Toxins on Child Health	7/16-4/17	\$10,000 PC Program
NCAA Postgraduate Research Fund Water and Sanitation Factors on Diarrheal Occurrences in Brazil	9/15-8/16	\$7,500 Recipient
Schowalter Foundation Evaluation of Biosand Filters in Brazil and Guatemala	8/15-7/16	\$7,250 Recipient

PUBLICATIONS (*Conference)

Submitted Publications

Rao, G., Kahler, A., **Voth-Gaeddert, L.E.**, Cranford, H., Libby, S., Galloway, R., Angelique-Molinari, N., Mattioli, M., Ellis, E., Yoder, J., Ellis, B.R., “*Microbial characterization, Factors Contributing to Contamination, and Household Use of Cistern Water, US Virgin Islands*”, (es-2022-03818c).

Voth-Gaeddert, L.E., Hunt, X., Tomlinson, M., van Heerden, A., “*Evaluating Differences in the Natural and Built Environment on Early Childhood Development: Integrating Google Street View, Computer Vision Models, and Bioinformatic Approaches*”, (STOTEN-S-22-22130).

Voth-Gaeddert, L.E., Momberg, D., Nkambule, B., Rohloff, P., Said-Mohamed, R., van Heerden, A., “*A Framework for Empowering Marginalized Communities via Information Interventions in Global Health: Examples from WASH and Malnutrition*”, (GPH-S-22-00616)

Voth-Gaeddert, L.E., Momberg, D., Brathwaite, K., Schranck, A., Libbey, S., Lemley, M., “*Evaluating the Costs and Components of a Territory-wide Household Water Storage and Treatment Program in the US Virgin Islands*”, (WPOL-S-22-00163)

Voth-Gaeddert, L.E., Momberg, D., Brathwaite, K., Schranck, A., Lemley, M., Libbey, S., “*Household UV Treatment of Cistern Water as a Viable Option for Generating Potable Water in the US Virgin Islands*”, (IJHEH-S-22-00625).

Peer-Reviewed Publications

1. Lindmark, M., Cherukumilli, K., Crider, Y.S., Marcenac P., Lozier, M., **Voth-Gaeddert, L.E.**, Lantagne, D.S., Mihelcic, J.R., Zhang, M., Just, C., Pickering, A.J., (2022). “*Passive chlorination for scalable water disinfection in resource-constrained settings: A Critical Review*”, Environmental Science & Technology, <https://doi.org/10.1021/acs.est.1c08580>
2. Seger, K.R, Day, C.A., **Gaeddert, L.E.**, Kahler, A., Rao, G., Ellis, E., Ellis, B.R., Byrd, B.D., (2022). “*A Cross-Sectional Household Survey in the U.S. Virgin Islands (2019) Reveals Cisterns as Challenging Peridomestic Aedes aegypti habitats*”, Journal of the American Mosquito Control Association 38 (2), 113-117.

3. **Voth-Gaeddert, L.E.**, Lemley, M., Brathwaite, K., Schranck, A., Libbey, S., (2022). “*Design and Evaluation of a Household Chlorination System for Treating Cistern Water in the US Virgin Islands*”, Accepted, Journal of Environmental Engineering. 10.1061/(ASCE)EE.1943-7870.0002063.
4. **Voth-Gaeddert, L.E.**, Lemley, M., Brathwaite, K., Momberg, D., Schranck, A., Libbey, S., (2022). “*Evaluating a Batch Chlorination Method for Household Cistern Water Treatment in the US Virgin Islands*”, Accepted, Journal of Environmental Engineering. 10.1061/(ASCE)EE.1943-7870.0002059
5. Irakoze, A.F., Esposito, F., Schranck, A., **Voth-Gaeddert, L.E.**, (2022). “*A Community Water System Mapping (CWSSMap) Platform for Supporting Rural Water Operators*”, Accepted, IEEE Global Humanitarian Technologies, 2022.
6. Momberg, D.J., **Voth-Gaeddert, L.E.**, Richter, L.M., Norris, S.A., Said-Mohamed, R., (2022). “*Rethinking water, sanitation, and hygiene (WASH) for human growth and development*”, (in press: <https://doi.org/10.1080/17441692.2022.2036218>)
7. **Voth-Gaeddert, L.E.**, Fikru, M., Oerther, D.B. (2022), “*Limited Benefits and High Costs are Associated with Low Monetary Returns for Guatemalan Household Investment in Water, Sanitation, and Hygiene Technologies*”, World Development 154(2022).
8. Fuhrmeister, E.R., **Voth-Gaeddert, L.E.**, Metilda, A., Tai, A., Batorsky, R.E., Veeraraghavan, B., Ward, H.D., Kang, G., Pickering, A.J., (2021) “*Surveillance of potential pathogens and antibiotic resistance in wastewater and surface water from Boston, USA and Vellore, India using long-read metagenomic sequencing*”, (in press: <https://doi.org/10.1101/2021.04.22.21255864>)
9. **Voth-Gaeddert, L.E.**, Schranck, A. (2021), “*Assessment of an Inline Chlorinator for Potable Water Systems in Low-Resource Settings*”, Journal of Environmental Engineering, 147(7).
10. Momberg, D.J., Ngandu, B.C., **Voth-Gaeddert, L.E.**, May, J., Norris, S.A., Said-Mohamed, R. (2021), “*Governance of water, sanitation and hygiene (WASH) in sub-Saharan Africa and associations with nutritional status in children under five years of age: A systematic review*”, Journal of Developmental Origins of Health and Disease, 12(1), 6-33.
11. Momberg D., **Voth-Gaeddert L.E.**, Ngandu B., Richter, L., May J., Norris S., Said-Mohamed, R. (2020), “*Water, sanitation, and hygiene (WASH) factors associated with growth between birth and one year of age in children in Soweto, South Africa: Results from the Soweto Baby WASH study*”, Journal of Water and Health, 18(5): 798-819
12. **Voth-Gaeddert, L.E.**, Jonah, C., Momberg, D., Ngandu, C., Said-Mohamad, R., Oerther, D.B., May, J. (2020), “*Assessment of Environmental Exposure Factors on Child Diarrhea and Systemic Inflammation in the Eastern Cape*”, Water Research, 169 (2020): 115244
13. **Voth-Gaeddert, L.E.**, Torres, O., Maldonado, J., Krajalnik-Brown, R., Rittmann, B., Oerther, D.B. (2019), “*Aflatoxin Exposure, Child Stunting, and Dysbiosis in the Intestinal Microbiome Among Children in Guatemala*”, Environmental Engineering Science, 36(8): 958-968

14. Oerther, D.B., **Voth-Gaeddert, L.E.**, Divelbiss, D.W. (2019) "*Improving Environmental Health Practice and Policy Through Convergence Research: A Case Study of Linked Food-Water Systems Enhancing Child Health*", Environmental Engineering Science, 46(7): 820-832
15. **Voth-Gaeddert, L.E.**, Oerther, D.B. (2019) "*Acute to Chronic Malnutrition: How the Importance of Water, Sanitation, and Hygiene Factors Change with Health Outcomes and Geographies in the Western Highlands of Guatemala*", Journal of Environmental Health, National Environmental Health Association, 82(1): 20-28
16. **Voth-Gaeddert, L.E.**, Al-Jabery, K.K., Olbricht, G.R., Wunsch, D.C., Oerther, D.B. (2019), "*Complex Associations Between Environmental Factors and Child Growth: A Novel Mixed Methods Approach*", Journal of Environmental Engineering, 145(6): 04019027
17. **Voth-Gaeddert, L.E.**, Stoker, M., Torres, O., Oerther, D.B. (2019), "*The Influence of Local Market and Household Factors on Aflatoxin Presence in Maize and Symptoms of its Exposure to Children in Guatemala*", International Journal of Environmental Health Research, DOI: 10.1080/09603123.2019.1594721
18. **Voth-Gaeddert, L.E.**, Cudney, E.A., Oerther, D.B., (2018) "*Identifying the Primary Factors Associated with Diarrheal Occurrences*", Environmental Engineering Science, 35(8): 836-845
19. **Voth-Gaeddert, L.E.**, Stoker, M., Torres, O., Oerther, D.B., (2018) "*Association of Aflatoxin Exposure and Height-for-Age Among Young Children in Guatemala*", International Journal of Environmental Health Research, 28(3): 280-292
20. **Voth-Gaeddert, L.E.**, Stoker, M., Cornell, D., Oerther, D.B., (2018) "*What Causes Childhood Stunting Among Children of San Vicente, Guatemala: Employing Complimentary, System-Analysis Approaches*", International Journal of Hygiene and Environmental Health, 221: 391-399
21. **Voth-Gaeddert, L.E.**, Cornell, D., (2016). "*Improving Health Information Systems in Guatemala Using Weighted Correlation Network Analysis: Development and Application of Network Algorithms for Understanding Child Stunting*", IEEE Global Humanitarian Technologies, 2016, 16673806: 686-693.
22. **Voth-Gaeddert, L.E.**, Oerther, D.B., (2015). "*Measuring Multidimensional Poverty in a Complex Environment; Identifying the Sensitive Links*", Humanitarian Technology: Science, Systems and Global Impact 2015. Elsevier. Boston, MA. Procedia Engineering, 107: 172-180
23. **Voth-Gaeddert, L.E.**, Divelbiss, D.W., Oerther, D.B. (2015). "*Utilizing Structural Equation Modeling to Correlate Biosand Filter Performance and Occurrence of Diarrhea in Enseado Do Aritapera, Para, Brazil*", Water Science and Technology: Water Supply, IWA. 15(1): 164-172
24. **Voth-Gaeddert, L.E.**, Divelbiss, D.W., Oerther, D.B. (2015). "*Utilizing Structural Equation Modeling as an Evaluation Tool for Critical Parameters of the Biosand Filter in a Pilot Study in Para, Brazil*", Water Science and Technology: Water Supply, IWA. 15(4): 845-851

25. ***Voth-Gaeddert, L.E.**, Maxadoni Kamil, I., Roosmini, D., Oerther, D.B. (2015). “*Modeling Population Health Dynamics for Indonesia and Guatemala: An Application of System Dynamics Modeling*”, 5th Environmental Technology and Management Conference
26. **Voth-Gaeddert, L.E.**, Oerther, D.B., (2014). “*Utilizing Structural Equation Modeling in the Development of a Standardized Intervention Assessment Tool*”, Humanitarian Technology: Science, Systems and Global Impact 2014. Elsevier. Boston, MA. Procedia Engineering, 78: 218-223

Abstracts (Oral and Poster)

2022

27. Poster; **Voth-Gaeddert, L.E.**, Momberg, D., Nkambule, B., Van Heerden, A., Said-Mohamed, R., (2022). “*amaWASH: A platform for women to share safety issues about WASH facilities in South Africa*”, 2022 UNC Water and Health Conference: Research, Policy, and Practice, Chapel Hill, October 24-28, 2022.
28. Oral; Irakoze, A.F., Esposito, F., Schranck, A., **Voth-Gaeddert, L.E.**, (2022). “*A Community Water System Mapping (CWSSMap) Platform for Supporting Rural Water Operators*”, 2022 IEEE Global Health Technology Conference, Santa Clara University, September 8-11, 2022.
29. Poster; Latif, P., Telussa, R., Suandy, I., **Voth-Gaeddert, L.E.**, Yunindika, T., Rayahu, K.P., Susanti, O., Utomo, G.B., Zenal, F.C., Schoonman, L. (2022). “*Pilot Molecular Antimicrobial Resistance Monitoring in the Poultry Slaughterhouse Environment*”, G20 Indonesia 2022, Side Event HWG 3: Seminar AMR, August 23-24, 2022.
30. Poster; Cheng, Q., **Voth-Gaeddert, L.E.**, Krajmalnik-Brown, R., (2022). “*Impact of dietary aflatoxin exposure on gut microbiota*”, 2022 Association of Environmental Engineering and Science Professors (AEESP) Research and Education Conference, St. Louis, MO June 28-30, 2022
31. Oral; **Voth-Gaeddert, L.E.**, Schranck, A., Irakoze, A.F., Esposito, F., (2022). “*Improving Low-Cost Decision Support Tools via Smartphone Sensors for Community Water System Management*”, 2022 Association of Environmental Engineering and Science Professors (AEESP) Research and Education Conference, St. Louis, MO June 28-30, 2022
32. Oral; **Voth-Gaeddert, L.E.**, Lemley, M., Brathwaite, K., Momberg, D., Schranck, A., Willford, I., Libbey, S., (2022). “*Evaluating Low-Cost Water Treatment Technologies for Roof-Harvested Rainwater Among Households in the US Virgin Islands*”, 2022 Association of Environmental Engineering and Science Professors (AEESP) Research and Education Conference, St. Louis, MO June 28-30, 2022
33. Poster; **Voth-Gaeddert, L.E.** (2022). “*Early Career Showcase: Lee E. Voth-Gaeddert*”, 2022 Association of Environmental Engineering and Science Professors (AEESP) Research and Education Conference, St. Louis, MO June 28-30, 2022
34. Oral; **Voth-Gaeddert, L.E.**, Lemley, M., Libbey, S. (2022). “*Rain-Harvested Drinking Water in USVI Households: Feasibility of Water Treatment Options*”, 2022 National

Environmental Health Association Annual Educational Conference, Spokane, WA June 28-July 1, 2022

2021

35. Oral; **Voth-Gaeddert, L.E.**, Irakoze, A.F., Schranck, A., Esposito, F., (2021). "Community Water System Mapping (CWSSMap): A Mobile App for Improved Water Management in Low Resource Settings", 2021 IEEE International Humanitarian Technology Conference (IHTC 2021), December 2-4, 2021
36. Poster; **Voth-Gaeddert, L.E.**, Ganesh, K., (2021). "An Ultrasonic Sensor for Early Warning of Latrine Overflows: An Infonomics Labs Innovation", UNC Water and Health Conference, October 2021
37. Oral, invited; Telussa, R., Harsono, A.T., Latif, P., **Voth-Gaeddert, L.E.**, (2021). "Evaluation of the AMR and Nanopore Pilot Study in Chicken Slaughterhouses," Government of Indonesia, Ministry of Agriculture – FAO-UN Joint EPT2, September 21, 2021
38. Poster; Irakoze, A.F., Schranck, A., **Voth-Gaeddert, L.E.**, Esposito, F., (2021). "CWSSMap: A geospatial tool for mapping water systems", Geo-Resolution 2021: Building a 21st Century Geospatial Ecosystem – From Hard Problems to Opportunities, September 14, 2021, Saint Louis University
39. Oral, invited; **Voth-Gaeddert, L.E.** (2021). "Machine Learning, WASH, and Malnutrition", Developmental Pathways for Health Research Unit Workshop, September 13, 2021, Johannesburg, South Africa
40. Oral; Vasudevan, M.S, **Voth-Gaeddert, L.E.** (2021). "Catalyzing sustainable futures for sanitation? Innovative financing and planning tools: Smart urban sanitation investment, data and tools," SIWI World Water Week, August 26, 2021, Stockholm, Switzerland (Virtual)
41. Oral, invited; Torres, O., **Voth-Gaeddert, L.E.**, (2021). "Exposición a aflatoxinas, retardo en talla, y cambios en el microbioma de niños de Guatemala," Secretaría Nacional de Ciencia y Tecnología Guatemala, August 25, 2021, Guatemala City, Guatemala
42. Oral; Karthykeyan, D., **Voth-Gaeddert, L.E.**, Mukuka, M.N. (2021). "Using data to build resilient urban sanitation and waste management: The CWIS SAP Experience," TBC/GSMA, World Water Week, August 24, 2021, Stockholm, Switzerland (Virtual)
43. Oral; **Voth-Gaeddert, L.E.**, Magawa, Y., Vasudevan, M.S., Zziwa, J.B., Tumusiime, C., Schrecongost, A. (2021). "A digital tool for urban sanitation planning for service providers," World Water Week, August 24, 2021, Stockholm, Switzerland (Virtual)
44. Oral; **Voth-Gaeddert, L.E.**, Vasudevan, M.S, Burt, Z. (2021). "Improving Urban Health through Sanitation Optimization: Citywide Inclusive Sanitation Service Assessment and Planning (CWIS SAP) Tool," 18th annual Global Health Science and Practice Technical Exchange, US Agency for International Development, April 23, 2021, Washington, DC (Virtual)

45. Oral, invited; **Voth-Gaeddert, L.E.**, Magawa, Y., Vasudevan, M.S., Zziwa, J.B., Schrecongost, A. (2021). "Learning Session: Citywide Inclusive Sanitation Service Assessment and Planning (CWIS SAP) Tool," Bill and Melinda Gates Foundation, March 24, 2021, Seattle, WA (Virtual)
46. Oral; **Voth-Gaeddert, L.E.** (2021). "Machine Learning Applications for Feature Selection and Prediction of Child Health Outcomes from Environmental Factors," Workshop at Nanoro Research Facility, March 17, 2021, Nanoro, Burkina Faso

2020

47. Poster; Fuhrmeister, E.R., **Voth-Gaeddert, L.E.**, Metilda, A., Tai, A., Batorsky, R.E., Veeraraghavan, B., Ward, H.D., Kang, G., Pickering, A.J. (2020). "Environmental surveillance of potential pathogens harboring antibiotic resistance genes in Boston, USA and Vellore, India using long-read sequencing," Wellcome Genome Conference: AMR-Genomes, Big Data, and Emerging Technologies; November 4-6, 2020, Cambridge, UK (Virtual)
48. Poster; Marcenac, P., **Voth-Gaeddert, L.E.**, Rugola, J., Shadrack, M., Temu, J., Massawe, G., Lozier, M., Brown, T.W., Murphy, J.L., Quick, R.E., Kiberiti, S., Brunkard, J.M. (2020), "Evaluation of automated chlorinators in healthcare facilities – Hai and Monduli Districts, Tanzania," 2020 UNC Water and Health Conference: Science, Policy and Practice, October 26-30, 2020, Durham, NC (Virtual)
49. Oral, invited; **Voth-Gaeddert, L.E.**, Rao, G., Kahler, A., Yoder, J. (2020). "Water and Emergency Preparedness," 70th Annual Environmental Engineering Conference, The University of Kansas, April 22, 2020, Lawrence, KS (Virtual)

2019

50. Oral, invited; **Voth-Gaeddert, L.E.** (2019). "Environmental Surveillance of Antibiotic Resistance: Integrating Molecular Biology," Emory Joint WASH Journal Club, November 1, 2019, Atlanta, GA
51. Oral, invited; **Voth-Gaeddert, L.E.**, Momberg, D., Tavener-Smith, L., Van Heerden, A., May, J., Said-Mohamad, R. (2019). "End-User Value of Information on WaSH: Developing an ICT Platform with Women in Soweto," Emory Joint WASH Journal Club, November 1, 2019, Atlanta, GA
52. Oral; **Voth-Gaeddert, L.E.**, Metilda, A., Tai, A., Batorsky, R., Balaji, V., Ward, H.D., Kang, G., Pickering, A.J. (2019). "Environmental Monitoring of Antibiotic Resistant Bacteria with Long-Read Sequencing in Boston and India," 2019 UNC Water and Health Conference: Science, Policy and Practice, October 7-11, 2019, Durham, NC
53. Oral; **Voth-Gaeddert, L.E.**, (2019). "A Systematic Approach to Investigate the Complex Causal Variables to Child Stunting in Guatemala," 2019 UNC Water and Health Conference: Science, Policy and Practice, October 7-11, 2019, Durham, NC
54. Oral; Rao, G., **Voth-Gaeddert, L.E.**, Kahler, A., Kirby, A., Murphy, J., Yoder, J., Ellis, B. (2019). "Household Water Quality in the US Virgin Islands: Understanding Risks in Cisterns," 2019 UNC Water and Health Conference: Science, Policy and Practice, October 7-11, 2019, Durham, NC

55. Oral; **Voth-Gaeddert, L.E.**, Rao, G., Kahler, A., Murphy, J., Yoder, J. (2019). "Large Volume Household Water Storage, Tanks, and Cisterns: Synthesizing Current Knowledge, Identifying Knowledge Gaps, and Targeting Risk Mitigation," 2019 UNC Water and Health Conference: Science, Policy and Practice, October 7-11, 2019, Durham, NC
56. Oral; **Voth-Gaeddert, L.E.**, Rao, G., Kahler, A., Murphy, J., Yoder, J. (2019). "Large Volume Household Water Storage, Tanks, and Cisterns: Synthesizing Current Knowledge, Identifying Knowledge Gaps, and Targeting Risk Mitigation," 2019 OU International WaTER Conference, September 15-18, 2019, Norman, OK

2018

57. Oral; **Voth-Gaeddert, L.E.** (2018). "Metagenomic approach to environmental surveillance for detection of bacterial pathogens and antimicrobial resistance genes", Tufts University – Christian Medical College Vellore, Lecture Series and Workshop, June 2018. Vellore, India
58. Oral; **Voth-Gaeddert, L.E.** (2018). "Oxford Nanopore MinION Workshop: Metagenomic and Resistome Application", Tufts University School of Engineering, Tufts Institute for the Environment, Workshop, March 2018. Boston, Massachusetts

2017

59. Poster; Momberg, D., Ngandu, B.C., **Voth-Gaeddert, L.E.**, May, J., Norris, S., Said-Mohamed, R. (2017). "Governance of water, sanitation and hygiene (WASH) in sub-Saharan Africa and associations with nutritional status in children under five years of age: A systematic review," 11th DOHaD World Congress, October 15, 2017, Rotterdam, Netherlands
60. Poster; **Voth-Gaeddert, L.E.**, Momberg, D., Ngandu, C., Oerther, D.B., May, J., Norris, S.A., Said-Mohamed, R. (2017). "The Role of Infectious Disease, Microbiome, and Enteric Dysfunction in the Fight Against Global Food Insecurity and Child Malnutrition," 3rd International Conference on Global Food Security, December 4, 2017, Cape Town, South Africa
61. Oral; Momberg, D., Ngandu, B.C., **Voth-Gaeddert, L.E.**, May, J., Norris, S., Said-Mohamed, R. (2017). "Water, sanitation and hygiene (WASH) in sub-Saharan Africa: A challenge for childhood nutritional status?," 3rd International Conference on Global Food Security, December 4, 2017, Cape Town, South Africa
62. Oral; **Voth-Gaeddert, L.E.** (2017). "Systems Thinking on Malnutrition: Transmission and Exposure of Enteric Diseases and Fungal Toxins to Children", Tufts University School of Medicine's Global Health Seminar, Invited Talk, October 2017. Boston, Massachusetts
63. Oral; **Voth-Gaeddert, L.E.** (2017). "Systems Analyses on Child Stunting: Transmission and Effects of Enteric Diseases and Mycotoxins", University of the Witwatersrand School of Public Health, Invited Talk, August 2017. Johannesburg, South Africa
64. Oral; **Voth-Gaeddert, L.E.**, Daigger, G., Oerther, D.B. (2017). "Science Diplomacy", 2017 AEESP Education and Research Conference, June 20-22, 2017, Ann Arbor, MI

65. Poster; **Voth-Gaeddert, L.E.**, Oerther, D.B. (2017). "A Systems Analysis of Contributing Factors to Child Stunting in Guatemala: Diarrhea and Environmental Enteric Dysfunction," 2017 AEESP Education and Research Conference, June 20-22, 2017, Ann Arbor, MI
66. Poster; **Voth-Gaeddert, L.E.**, Oerther, D.B. (2017). "Analyzing Community Level Transmission of Aflatoxin in Maize: A Systems Analysis in the Western Highlands of Guatemala," 2017 AEESP Education and Research Conference, June 20-22, 2017, Ann Arbor, MI

2016

67. Oral; **Voth-Gaeddert, L.E.** (2016). "Patógenos y Desnutrición Crónica en un Sistema Complicado", Universidad Rafael Landivar, September 2016. Quetzaltenango, Guatemala
68. Poster; Collum, J., Faulkner, S., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2016). "Creating Community-Driven Transparency in Local Government Water and Energy Sectors," Stueck Lecture and Civil Engineering Academy Spring Meeting, Department of Civil, Architectural, and Environmental Engineering, Missouri University of Science and Technology, April 22, 2016, Rolla, MO
69. Poster; Oerther, D.B., Divelbiss, D., **Voth-Gaeddert, L.E.** (2016). "Water Quality in Ixcán, Guatemala," Stueck Lecture and Civil Engineering Academy Spring Meeting, Department of Civil, Architectural, and Environmental Engineering, Missouri University of Science and Technology, April 22, 2016, Rolla, MO
70. Oral; Poster; Oerther, D.B., Divelbiss, D., **Voth-Gaeddert, L.E.** (2016). "Water Quality in Ixcán, Guatemala," Excellence in Environmental Engineering and Science, AAEEES, April 14, 2016, Washington, DC
71. Poster; Collum, J., Faulkner, S., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2016). "Creating Community-Driven Transparency in Local Government Water and Energy Sectors," 12th Annual Undergraduate Research Conference, Missouri University of Science and Technology, April 11, 2016, Rolla, MO

2015

72. Oral; **Voth-Gaeddert, L.E.**, Roosmini, D., Maxadoni Kamil, I., Oerther, D.B., (2015). "Identifying The Long Term And Short Term Feedback Loops Impacting National Child Health Levels In Guatemala; An Application Of System Dynamics Modeling", Environmental Technology and Management Conference, November 2015. Institut Teknologi Bandung, Bandung, Indonesia
73. Oral; **Voth-Gaeddert, L.E.**, Oerther, D.B., (2015). "Environmental Health and Household Demographics Impact Diarrhea and Child Stunting in a Complex System", American Chemical Society, National Meeting, August 2015. Boston, MA
74. Oral; **Voth-Gaeddert, L.E.** (2015). "Graduate Student Reality Check – Step II: You're in – Now What?" Invited Panel Member, American Chemical Society, National Meeting, August 2015. Boston, MA
75. Oral; **Voth-Gaeddert, L.E.** (2015). "Measuring Multidimensional Poverty in a Complex Environment", Humanitarian Technology: Science, Systems and Global Impact 2015. Massachusetts Institute of Technology, May 12-15, 2015, Boston, MA

76. Poster; **Voth-Gaeddert, L.E.**, Oerther, D.B. (2015). "From Simple to Complex to Chaotic; What Level is Right for You?" Humanitarian Technology: Science, Systems and Global Impact 2015. Massachusetts Institute of Technology, May 12-15, 2015, Boston, MA

2014

77. Oral; Oerther, D.B., **Voth-Gaeddert, L.E.** (2014). "Understanding the Partner Community: The Triple Bottom Line of People, Prosperity and Planet," 2014 National Conference of Engineers Without Borders USA, November 2, 2014, Washington, DC.
78. Oral; **Voth-Gaeddert, L.E.**, Oerther, D.B., (2014). "Systems Approaches to Monitoring and Evaluation in Complex Systems", 2014 National Conference of Engineers Without Borders USA, November 2, 2014, Washington, DC.
79. Oral; Petersen, D., Anderson, V., Anderson, B., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2014). "Poverty of Relationship Can Also Be Overcome with Technology: The Sharing Economy," IEEE Global Humanitarian Technology Conference, October 10-13, 2014, Silicon Valley, CA
80. Oral; **Voth-Gaeddert, L.E.**, Oerther, D.B. (2014). "Utilizing Structural Equation Modeling as an Evaluation Tool for Critical Parameters of the Biosand Filter in a Pilot Study in Para, Brazil", 5th Slow Sand and Alternative Biofiltration Technologies Conference, IWA, June 19-21, Nagoya, Japan.
81. Oral; **Voth-Gaeddert, L.E.** (2014). "Understanding and Assessing Interventions for Multidimensional Poverty", Humanitarian Technology: Science, Systems and Global Impact 2014. Massachusetts Institute of Technology, Boston, MA
82. Poster; Wallace, D., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2014). "Teaching Kids to Give a Crap," Missouri University of Science and Technology 10th Undergraduate Research Conference, April 16, 2014, Rolla, MO
83. Poster; Dowd, N., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2014). "Affective Domain Knowledge Relating to Biosand Filters," Missouri University of Science and Technology 10th Undergraduate Research Conference, April 16, 2014, Rolla, MO
84. Poster; Beck, K., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2014). "Improving the Standard of Living for Indian Women by Creating a Sustainable Option for Water Transport," Missouri University of Science and Technology 10th Undergraduate Research Conference, April 16, 2014, Rolla, MO
85. Poster; Schnoebelen, D., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2014). "Improving Ability to Transfer Water Effectively and Inexpensively in African Villages," Missouri University of Science and Technology 10th Undergraduate Research, April 16, 2014, Rolla, MO

2013

86. Oral; **Voth-Gaeddert, L.E.**, Oerther, D.B. (2013). "Monitoring and Evaluation of Biosand Filters and Diarrhea in Enseado Do Aritapera, Para, Brazil Utilizing Structural Equation Modeling". 17th International Symposium on Health-Related Water Microbiology, IWA, September 15-20, Florianopolis, Brazil.

87. Poster; Sestak, M., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2013). "Utilizing Decision Support Tools to Provide Clean Water," Missouri University of Science and Technology 9th Undergraduate Research Conference, April 3, 2013, Rolla, MO.
88. Poster; Schrank, A., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2013). "Utilization of Survey Questions and Responses to Evaluate Sanitation Concerns in Santarem, Para, Brazil," Missouri University of Science and Technology 9th Undergraduate Research Conference, April 3, 2013, Rolla, MO.
89. Poster; Goodwin, T., **Voth-Gaeddert, L.E.**, Oerther, D.B. (2013). "Determining the Effectiveness of Bio-sand Filtration to Remove Coliforms from Drinking Water Along the Tapajos River in Para, Brazil," Missouri University of Science and Technology 9th Undergraduate Research Conference, April 3, 2013, Rolla, MO.
90. Oral; **Voth-Gaeddert, L.E.**, Korff, A., Oerther, D.B. (2013). "Evaluation of Groundwater in Local Villages in Gujarat", Institute of Science & Technology for Advanced Studies & Research (ISTAR), Collaborative Research Forum, Dec. 27-Jan. 14, Anand, Gujarat, India
91. Poster; **Voth-Gaeddert, L.E.**, Puckett, P., Oerther, O., Schriener, A. (2012). "Growing the Crowd of Users for Microtask Platforms with the Goal of Alleviating Poverty," Missouri S&T Undergraduate Research Conference Poster Competition, April 16. (second place winner) Rolla, Missouri.

NON-PEER REVIEWED PUBLICATIONS

AMR Detection using Nanopore Sequencing Technology 2019-21 Pilot Project, FAO-UN, 2022
 Citywide Inclusive Sanitation Learning Brief Series: Financing Sanitation Overview, 2021
 Citywide Inclusive Sanitation Learning Brief Series: Financing Sanitation Containment, 2021
 Citywide Inclusive Sanitation Learning Brief Series: Financing Sanitation Emptying, 2021
 Citywide Inclusive Sanitation Learning Brief Series: Financing Sanitation Treatment, 2021
 CWIS SAP A tool to support inclusive sanitation: Reflections on data needs and gaps, 2021
 CWIS SAP: Definitions and Methods of the Service Assessment and Planning Tool, 2021

TEACHING & ADVISING

2018	Introduction to Biostatistics (guest lecturer), Tufts University
2016	Designing Courses for Significant Learning Program, University of Missouri
2014	Introduction to Environmental Engineering (TA), Washington University, St. Louis
2013-4	Introduction to Environmental Engineering (TA), Missouri S&T
2022-3	Bongiwe Nkambule, Masters, University of the Witwatersrand, MS Committee

HONORS & ACTIVITIES

2022	Early Career Board Member, Journal of Environmental Engineering (ASCE)
2021	+1Global Fund Nomination, Top Child Malnutrition-WaSH Project
2020	68 th Annual CDC ATSDR Honor Awards Nomination, Best Project in Health Equity

- 2019 Best Innovative Environmental Health Solution, Chartered Institute of Environmental Health
- 2017-8 NIH D43 Global Health Training Program
- 2018 MIT Impact Program Fellow, MIT
- 2017 Student Exchange Ambassador, Missouri University of Science and Technology
- 2017 Returned Peace Corps Volunteer, USG
- 2016 Superior Achievement Award, American Academy of Environmental Engineers and Scientists
- 2016 Global Leaders Institute
- 2016-7 John Ernest Foundation Fellow
- 2015 Weiner Assistantship Award, Missouri S&T
- 2015 Sigma XI 1st Place Engineering Award
- 2015 Global Engineering Education Exchange Ambassador
- 2014 Miner Alumni Leadership Scholarship
- 2014-7 Chancellors Fellow Missouri S&T
- 2014 Chi Epsilon Honor Society, Missouri S&T
- 2013 Haydon Engineering Scholarship, Missouri S&T
- 2013 Stevens Engineering Scholarship, Missouri S&T
- 2013 Mingo Endowment Scholarship, Missouri S&T
- 2012 Cum Laude, Civil Engineering, Missouri S&T
- 2012 Academic All-American NCAA Division II Baseball
- 2012 Presidential Academic Honor Roll, Missouri S&T
- 2011 Academic All-Conference NCAA Division II Baseball, Missouri S&T
- 2009 Presidential Honor Roll, Bethel College

SOFTWARE DEVELOPMENT



CWSMap: A community water system (CWS) mapping tool, built on EPANET, for water technicians in low-resource or remote communities



amaWASHa: A platform for women to report and receive information on the safety of latrines and water sources regarding physical harassment and biological contamination



CWIS SAP: supports decision makers to improve city-level equity, safety and sustainability for sanitation in resource limited and highly complex urban contexts

USVI Water Treatment Decision Tool: A web-based tool for households in USVI to use to identify which water treatment technologies they need based on water use habits

CERTIFICATIONS & WORKSHOPS

- 2021 Associate Systems Engineering Professional, International Council on Systems Engineering
- 2021 Licensed Professional Engineer, State of Missouri
- 2019 Registered Environmental Health Specialist/Sanitarian, National Environmental Health Association
- 2019 Human Subjects, Research Ethics, & IRB Processes Training Course, CDC, Collaborative Institutional Training Initiative (CITI) Program
- 2018 Preparedness and Emergency Response Training, Tier Four, CDC Emergency Operations Center

- 2017 Human Subjects Research & Basic IRB Regulations Training, CITI Program
- 2017 BioTech 75 Metagenomics Data Analysis Workshop, NIH
- 2016 Intro to Water Diplomacy, United Nations Institute for Training and Research
- 2016 Designing Courses for Significant Learning Program, University of Missouri
- 2016 Chemical Life Cycle Collaborative, EPA, University of California Santa Barbara
- 2015 Longitudinal Data Analysis Workshop, Brown University
- 2014 Design Thinking and Project Innovation Workshop, MOOC
- 2013 Quantitative Microbial Risk Assessment Short Course, Drexel University
- 2012 Fundamentals of Engineering, National Council of Examiners for Engineering

PROFESSIONAL EXPERIENCE

- 2022 – Current; **International Genomics Consultant**, Representation Office of Indonesia, Food and Agriculture Organization of the United Nations (FAO-UN), Jakarta, Indonesia
- 2021 – Current; **Research Scientist**, Center for Indigenous Health Research, Maya Health Alliance, Guatemala
- 2020 – Current; **Honorary Researcher**, Developmental Pathways for Health Research Unit, University of the Witwatersrand, Johannesburg, South Africa
- 2020 – Current; **Co-founder and CTO**, Global Health Engineering (GHE) LLC, USA
- 2020 – 2021; **Associate Director**, Governance and Service Delivery, Athena Infonomics LLC, USA
- 2020 – 2021; **International Genomics Consultant**, Representation Office of Indonesia, Food and Agriculture Organization of the United Nations (FAO-UN), Jakarta, Indonesia
- 2018 – 2020; **Environmental Systems Engineer, GS-12**, WDPB, Division of Foodborne, Waterborne and Environmental Diseases, Centers for Disease Control and Prevention, Atlanta, GA
- 2017 – 2018; **Global Health Innovation Post-Doctoral Scholar**, Tufts University School of Medicine and School of Engineering, Tufts University, Medford, MA
- 2017; **Research Fellow**, DST-NRF Centre of Excellence in Food Security, University of the Witwatersrand, Johannesburg, South Africa
- 2013 – 2017; **Graduate Research and Teaching Assistant**, Missouri S&T Environmental Engineering Department, Rolla, MO
- 2017; **Food Security Consultant**, Catholic Relief Services Guatemala, CRS, Guatemala City
- 2016 – 2017; **Environmental Health Engineer**, Development Alternatives Inc., United States Peace Corps Response Volunteer, Guatemala
- 2015 – 2016; **Food Security Consultant**, Representation Office of Indonesia, Food and Agriculture Organization of the United Nations (FAO-UN), Jakarta, Indonesia

2015; **Policy Consultant**, Liaison Office for North America, Food and Agriculture Organization of the United Nations, Washington, DC

2015; **Diplomatic Intern**, Secretary's Office of Global Food Security, United States Department of State, Washington, DC

2014 – 2015; **Legislative Intern**, Legislative and Public Affairs, United States Agency for International Development, Washington, DC

2014; **Engineering Intern**, Department of Compact Operations, Millennium Challenge Corporation, Washington, DC

2013; **Environmental Engineering Consultant**, Mennonite Central Committee South America, Santa Cruz, Bolivia

ACADEMIC JOURNAL REVIEWER

Early Career Board Member, Journal of Environmental Engineering (ASCE)

<https://publons.com/researcher/3048662/lee-voth-gaeddert/peer-review/>

- Water Research
- Environmental Science & Technology
- International Journal of Environmental Health Research
- Current Opinion in Environmental Science & Health
- Health Policy and Planning
- International Journal of Environmental Research and Public Health
- BMJ Paediatrics
- The Journal of Nutrition

PROFESSIONAL AFFILIATIONS & COMMITTEES

Association of Environmental Engineers and Science Professors (AEESP)

- Member since 2017

National Environmental Health Association (NEHA)

- Member since 2019

International Council on Systems Engineering (INCOSE)

- Member since 2020

Institute of Electrical & Electronic Engineers (IEEE)

- Member since 2014

American Public Health Association (APHA)

- Member since 2017

Engineers Without Borders (EWB)

- Member since 2010
- Application Review Committee 2014-7

Peace Corps Response Volunteers (PCRV)

- Member since 2017

International Water Association (IWA)

- Member since 2013

Water Environment Federation (WEF)

- Member since 2013

International Exchange Alumni, US Depart. of State

- Member since 2017

Chi Epsilon Honor Society

- Member since 2012

American Society for Microbiology (ASM)

- Member since 2019

MENTORS

Post-grad – CDC

Dr. Vincent Hill, PhD, MS, PE, Branch Chief, Waterborne Disease Prevention Branch, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention

Mr. Jonathan Yoder, MSW, MPH, Deputy Branch Chief, Waterborne Disease Branch, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention

Post-grad – Tufts University

Dr. Amy Pickering, PhD, PI, Assistant Professor of Environmental Health Engineering, School of Engineering, Tufts University, amy.pickering@tufts.edu

Dr. Honorine Ward, MD, PI, Professor of Medicine, Department of Geographic Medicine and Infectious Diseases, School of Medicine, Tufts University, hward@tuftsmedicalcenter.org

Post-grad – University of the Witwatersrand

Dr. Shane Norris, PhD, Research Professor, Director, Wits/MRC Developmental Pathways for Health Research Unit, Department of Paediatrics and Child Health, School of Clinical Medicine, University of the Witwatersrand, Johannesburg, South Africa

Dr. Julian May, PhD, Research Professor, Director, The Centre of Excellence in Food Security, University of the Western Cape, Cape Town, South Africa

PhD Committee Members

Dr. Daniel Oerther, PhD, PE, BCEE, **Adviser**, Senior Science Adviser, US Department of State, Full Professor, Missouri University of Science and Technology, oertherd@mst.edu

Dr. Robert Holmes, PhD, PE, National Flood Coordinator, US Geologic Survey, Adjunct Professor, Missouri University of Science and Technology, holmesrr@mst.edu

Dr. V.A. Samaranyake, PhD, Curator's Teaching Professor & Director of Statistical Graduate Studies, Full Professor, Missouri University of Science and Technology, vsam@mst.edu

Dr. Dev Niyogi, PhD, Associate Professor of Biology, Missouri University of Science and Technology, niyogid@mst.edu

Dr. Mahelet Fikru, PhD, Assistant Professor of Environmental Economics, Missouri University of Science and Technology, fikruma@mst.edu

PhD Department Chair

Dr. Joel Burken, PhD, PE, BCEE, Full Professor, Department Chair and Curators' Professor, Civil, Department Architectural, and Environmental Engineering, Missouri University of Science and Technology, burken@mst.edu