CONTACT INFORMATION

Dr. David R. Johnson, Group Leader / Senior Scientist Swiss Federal Institute of Aquatic Science and Technology (Eawag) Department of Environmental Microbiology (Umik), BU-F04 Microbial Community Assembly Group CH-8600 Dübendorf, Switzerland

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EDUCATION

- 2007 **Ph.D., Environmental Engineering** (with minors in microbiology and bioengineering) University of California, Berkeley, CA, USA
- 2002 M.S.E, Environmental Engineering University of Michigan, Ann Arbor, MI, USA
- 2000 **B.S., Civil Engineering** (with environmental emphasis) Iowa State University, Ames, IA, USA

PROFESSIONAL POSITIONS

- 2014 present **Group Leader / Senior Scientist** Swiss Federal Institute of Aquatic Science and Technology (Eawag), Dübendorf, Switzerland Department of Environmental Microbiology Microbial Community Assembly Group
- 2014 present Lecturer Swiss Federal Institute of Technology (ETHZ), Zürich, Switzerland Department of Environmental Systems Science Institute of Biogeochemistry and Pollutant Dynamics
- 2016 2017 Sabbatical Visiting Scientist University of Michigan, Ann Arbor, MI, USA Department of Civil and Environmental Engineering Host: Prof. Dr. Lutgarde Raskin
- 2009 2014 Junior Group Leader (Oberassistent) Swiss Federal Institute of Technology (ETHZ), Zürich, Switzerland Department of Environmental Systems Science Institute of Biogeochemistry and Pollutant Dynamics Supervisor: Prof. Dr. Martin Ackermann
- 2007 2009 **Postdoctoral Researcher and Lecturer** University of Lausanne, Lausanne, Switzerland Department of Fundamental Microbiology Supervisor: Prof. Dr. Jan Roelof van der Meer

- 2004 2007 **Guest Researcher** Lawrence Berkeley National Laboratory, Berkeley, CA, USA Earth Sciences Division Ecology Department Host: Dr. Gary Andersen
- 2003 2007 **Research and Teaching Assistant,** University of California, Berkeley, CA, USA Department of Civil and Environmental Engineering Supervisor: Prof. Dr. Lisa Alvarez-Cohen

Supervisor: Prof. Dr. Linda M. Abriola

2001 – 2002 **Research Assistant** University of Michigan, Ann Arbor, MI, USA Department of Civil and Environmental Engineering

1999 – 2000 Laboratory Assistant Iowa State University, Ames, IA, USA Department of Civil, Construction, and Environmental Engineering Supervisor: Prof. Dr. Say-Kee Ong

EDITORIAL POSITIONS

- 2021 present **Current Opinion in Biotechnology** Editorial board member
- 2020 present **The ISME Journal** Editorial board member

SCIENTIFIC BOARD/COMMISSION POSITIONS

- 2020 present **European Federation of Biotechnology** Invited board member of the Environmental Biotechnology Division
- 2020 present Swiss Society for Microbiology Member of the Lay Communication Section
- 2017 present Swiss Society for Microbiology Elected head of the Environmental Microbiology Section
- 2014 2017 **IWA specialist group on Microbial Ecology in Water Engineering** Elected member of the management committee

CURRENT TEACHING

Spring termsEnvironmental Microbiology Practical2010 – presentDepartment of Environmental Systems Science, ETHZ, Zürich, Switzerland
Co-led by Prof. Dr. Martin Ackermann, Dr. David R. Johnson, and Dr. Tim Julian

PEER-REVIEWED JOURNAL PUBLICATIONS

- 1. Dubey M, Hadadi N, Pelet S, Carraro N, Johnson DR, van der Meer JR (2021) Environmental connectivity controls diversity in soil microbial communities. *Commun Biol. In press.*
- 2. Goldschmidt F, Caduff L, Johnson DR (2021) Causes and consequences of pattern diversification in a spatially selforganizing microbial community. *ISME J. In press*.
- 3. Borer B, Ciccarese D, Johnson D, Or D (2020) Spatial organization in microbial range expansion emerges from trophic dependencies and successful lineages. *Commun Biol* **3**: 685.
- 4. **Johnson DR**, Pomati F (2020) A brief guide for the measurement and interpretation of microbial functional diversity. *Environ Microbiol* **22**: 3039-3048.
- 5. Ciccarese D, Zuidema A, Merlo V, Johnson DR (2020) Interaction-dependent effects of surface structure on microbial spatial self-organization. *Philos Trans Royal Soc B* **375**: 20190246.
- 6. Johnson DR, Noack S (2020) Editorial overview: Causes and biotechnological application of microbial metabolic specialization. *Curr Opin Biotechnol* **62**: iii-vi.
- 7. Achermann S, Mansfeldt CB, Müller M, Johnson DR, Fenner K (2020) Relating metatranscriptomic profiles to the micropollutant biotransformation potential of complex microbial communities. *Environ Sci Technol* **54**: 235-244.
- Wu L, Ning D, Zhang B, Li Y, Zhang P, Shan X, Zhang Q, Brown M, Li Z, Van Nostrand JD, Ling F, Xiao N, Zhang Y, Vierheilig J, Wells GF, Yang Y, Deng Y, Tu Q, Wang A, Global Water Microbiome Consortium, Zhang T, He Z, Keller J, Nielsen PH, Alvarez PJJ, Criddle CS, Wagner M, Tiedje JM, He Q, Curtis TP, Stahl DA, Alvarez-Cohen L, Rittmann BE, Wen X, Zhou J (2019) Global diversity and biogeography of bacterial communities in wastewater treatment plants. *Nat Microbiol* **4**: 1183-1195.
- Mansfeldt C, Achermann S, Men Y, Walser JC, Villez K, Joss A, Johnson DR, Fenner K (2019) Microbial residence time is a controlling parameter of the taxonomic composition and functional profile of microbial communities. *ISME J* 13: 1589-1601.
- Ju F, Beck K, Yin X, Maccagnan A, McArdell CS, Singer H, Johnson DR, Zhang T, Bürgmann H (2019) Wastewater treatment plant resistomes are shaped by bacterial composition, genetic exchange, and upregulated expression in the effluent microbiomes. *ISME J* 13: 346-360.
- 11. Lilja EE, Johnson DR (2019) Substrate cross-feeding affects the speed and trajectory of molecular evolution within a synthetic microbial assemblage. *BMC Evol Biol* **19**: 129.
- 12. Tecon R, Mitri S, Ciccarese D, Or D, van der Meer JR, **Johnson DR** (2019) Bridging the holistic-reductionist divide in microbial ecology. *mSystems* **4**: e00265-18.
- 13. Patsch D, van Vliet S, Marcantini LG, Johnson DR (2018) Generality of associations between biological richness and the rates of metabolic processes across microbial communities. *Environ Microbiol* 20: 4356-4368.
- 14. Goldschmidt F, Regoes R, Johnson DR (2018) Metabolite toxicity slows local diversity loss during expansion of a microbial cross-feeding community. *ISME J* 12: 136-144.
- 15. Wells GF, Shi YJ, Laureni M, Weissbrodt DG, Joss A, Bürgmann H, **Johnson DR**, Morgenroth E (2017) Comparing the resistance, resilience, and stability of replicate moving bed biofilm and suspended growth combined nitritation-anammox reactors. *Environ Sci Technol* **51**: 5108-5117.
- 16. Goldschmidt F, Regoes R, Johnson DR (2017) Successive range expansion promotes diversity and accelerates evolution in spatially structured microbial populations. *ISME J* **11**: 2112-2123.

- 17. Marchal M, Selina Derksen, Sven Panke, Ackermann M, Johnson DR (2017) A passive mutualistic interaction promotes the evolution of spatial structure within microbial populations. *BMC Evol Biol* **17**: 106.
- 18. Lilja EE, Johnson DR (2017) Metabolite toxicity determines the pace of molecular evolution within microbial populations. *BMC Evol Biol* **17**: 52.
- 19. Men Y, Achermann S, Helbling DE, **Johnson DR**, Fenner K (2017) Relative contribution of ammonia oxidizing bacteria and other members of nitrifying activated sludge communities to micropollutant biotransformation. *Water Res* **109**: 217-226.
- Men Y, Han P, Helbling DE, Jehmlich N, Herbold C, Guide R, Onnis-Hayden A, Gu AZ, Johnson DR, Wagner M, Fenner K. (2016) Biotransformation of two pharmaceuticals by the ammonia-oxidizing archaeon *Nitrososphaera gargensis*. *Environ Sci Technol* 50: 4682-4692.
- 21. Filippidou S, Bueche M, Wunderlin T, Junier T, Roussel-Delif L, Jeanneret N, Dorador C, Molina V, Ioannidou A, Vargemezis G, **Johnson DR**, Junier P (2016) A combination of extreme environmental conditions favor the prevalence of endospore-forming firmicutes. *Front Microbiol* **7**: 1707.
- 22. Dolinšek J, Goldschmidt F, Johnson DR (2016) Synthetic microbial ecology and the dynamic interplay between microbial genotypes. *FEMS Microbiol Rev* **40**: 961-979.
- Kinnunen M, Dechesne A, Proctor C, Hammes F, Johnson DR, Quintela-Baluja M, Graham D, Daffonchio D, Fodelianakis S, Hahn N, Boon N, Smets BF (2016) A conceptual framework for invasion in microbial communities. *ISME J* 10: 2773-2775.
- 24. Widder S, Allen R, Pfeiffer T, Curtis TP, Wiuf C, Sloan WT, Cordero OX, Brown SP, Momeni B, Shou W, Kettle H, Flint HJ, Haas AF, Laroche B, Kreft JU, Rainey PB, Freilich S, Schuster S, Milferstedt K, van der Meer JR, Grosskopf T, Huisman J, Free A, Picioreanu C, Quince C, Klapper I, Labarthe S, Smets BF, Wang H, Isaac Newton Institute Fellows, Soyer OS (2016) Challenges in microbial ecology: building predictive understanding of community function and dynamics. *ISME J* 10: 2557-2568.
- 25. Lindemann SR, Bernstein HC, Song HS, Fredrickson JK, Fields MW, Shou W, Johnson DR, Beliaev AS (2016) Engineering microbial consortia for controllable outputs. *ISME J* **10**: 2077-2084.
- 26. Lilja EE, Johnson DR (2016) Segregating metabolic processes into different microbial cells accelerates the consumption of inhibitory substrates. *ISME J* **10**: 1568-1578.
- 27. Johnson DR, Lee TK, Park J, Fenner K, Helbling DE (2015) The functional and taxonomic richness of wastewater treatment plant microbial communities are associated with each other and with ambient nitrogen and carbon availability. *Environ Microbiol* **17**: 4851-4860.
- 28. Johnson DR, Helbling DE, Men Y, Fenner K (2015) Can meta-omics help to establish causality between contaminant biotransformations and genes or gene products? *Environ Sci: Water Res Technol* **1**: 272-278.
- 29. Johnson DR, Helbling DE, Lee TK, Park J, Fenner K, Kohler HPE, Ackermann M (2015) Association of biodiversity with the rates of micropollutant biotransformations among full-scale wastewater treatment plant communities. *Appl Environ Microbiol* 81: 666-675.
- 30. Helbling DE, Johnson DR, Lee TK, Scheidegger A, Fenner K (2015) A framework for establishing predictive relationships between specific bacterial 16S rRNA sequence abundances and biotransformation rates. *Water Res* **70**: 471-484.
- West KA, Lee PKH, Johnson DR, Zinder SH, Alvarez-Cohen L (2013) Global gene expression of *Dehalococcoides* within a robust dynamic TCE-dechlorinating community under conditions of periodic substrate supply. *Biotechnol Bioeng* 110: 1333-1341.

- 32. Coronado E, Roggo C, Johnson DR, van der Meer JR (2012) Genome-wide analysis of salicylate and dibenzofuran metabolism in *Sphingomonas wittichii* RW1. *Front Microbiol* **3**: 300.
- 33. Fida TT, Breugelmans P, Lavigne R, Coronado E, **Johnson DR**, van der Meer JR, Mayer AP, Heipieper HJ, Hofkens J, Springael D (2012) Exposure to solute stress affects genome-wide expression but not the polycyclic aromatic hydrocarbon-degrading activity of *Sphingomonas* sp. LH128 in biofilms. *Appl Environ Microbiol* **78**: 8311-8320.
- 34. Helbling DE, Ackermann M, Fenner K, Kohler HPE, **Johnson DR** (2012) The activity level of a microbial community function can be predicted from its metatranscriptome. *ISME J* **6**: 902-904.
- 35. Helbling DE, Johnson DR, Honti M, Fenner K (2012) Micropollutant biotransformation kinetics associate with WWTP process parameters and microbial community characteristics. *Environ Sci Technol* **46**: 10579-10588.
- 36. Johnson DR, Goldschmidt F, Lilja EE, Ackermann M (2012) Metabolic specialization and the assembly of microbial communities. *ISME J* 6: 1985-1991.
- Men Y, Feil H, VerBerkmoes NC, Shah MB, Johnson DR, Lee PK, West KA, Zinder SH, Andersen GL, Alvarez-Cohen L (2012) Sustainable syntrophic growth of *Dehalococcoides ethenogenes* strain 195 with *Desulfovibrio vulgaris* Hildenborough and *Methanobacterium congolense*: global transcriptomic and proteomic analysis. *ISME J* 6: 410-421.
- 38. Johnson DR, Coronado E, Moreno-Forero SK, Heipieper HJ, van der Meer JR (2011) Transcriptome and membrane fatty acid analyses reveal different strategies for responding to permeating and non-permeating solutes in the bacterium *Sphingomonas wittichii*. *BMC Microbiol* **11**: 250.
- 39. Gaillard M, Pradervand N, Minoia M, Sentchilo V, **Johnson DR**, van der Meer JR (2010) Transcriptome analysis of the mobile genome ICE*clc* in *Pseudomonas knackmussii* B13. *BMC Microbiol* **10**: 153.
- Johnson DR, Czechowska K, Chèvre N, van der Meer JR (2009) Toxicity of triclosan, penconazole, and metalaxyl on Caulobacter crescentus and a freshwater microbial community as assessed by flow cytometry. Environ Microbiol 11: 1682-1691.
- 41. Johnson DR, Nemir A, Andersen GL, Zinder SH, Alvarez-Cohen L (2009) Transcriptomic microarray analysis of corrinoid responsive genes in *Dehalococcoides ethenogenes* strain 195. *FEMS Microbiol Lett* **294**: 198-206.
- 42. Czechowska K, Johnson DR, van der Meer JR (2008) Use of flow cytometric methods for single-cell analysis in environmental microbiology. *Curr Opin Microbiol* **11**: 205-212.
- 43. Johnson DR, Brodie EL, Hubbard AE, Andersen GL, Zinder SH, Alvarez-Cohen L (2008) Temporal transcriptomic microarray analysis of "*Dehalococcoides ethenogenes*" strain 195 during the transition into stationary phase. *Appl Environ Microbiol* **74**: 2864-2872.
- West KA, Johnson DR, Hu P, DeSantis TZ, Brodie EL, Lee PKH, Feil H, Andersen GL, Zinder SH, Alvarez-Cohen L (2008) Comparative genomics of "Dehalococcoides ethenogenes" 195 and an enrichment culture containing unsequenced "Dehalococcoides" strains. Appl Environ Microbiol 74: 3490-3496.
- 45. Johnson DR, Park J, Kukor JJ, Abriola LM (2006) Effect of carbon starvation on toluene degradation activity by toluene monooxygenase-expressing bacteria. *Biodegradation* **17**: 437-445.
- 46. Lee PKH, Johnson DR, Holmes VF, He J, Alvarez-Cohen L (2006) Reductive dehalogenase gene expression as a biomarker for physiological activity of *Dehalococcoides* spp. *Appl Environ Microbiol* **72**: 6161-6168.
- 47. Pecson BM, Barrios JA, Johnson DR, Nelson KL (2006) A real-time PCR method for quantifying viable *Ascaris* eggs using the first internally-transcribed spacer region of rRNA. *Appl Environ Microbiol* **72**: 7864-7872.

- Johnson DR, Lee PKH, Holmes VF, Alvarez-Cohen L (2005) An internal reference technique for accurately quantifying specific mRNAs by real-time PCR with application to the *tceA* reductive dehalogenase gene. *Appl Environ Microbiol* 71: 3866-3871.
- 49. Johnson DR, Lee PKH, Holmes VF, Fortin AC, Alvarez-Cohen L (2005) Transcriptional expression of the *tceA* gene in a *Dehalococcoides*-containing microbial enrichment. *Appl Environ Microbiol* **71**: 7145-7151.

BOOK CHAPTERS

- 50. Ciccarese D, Johnson DR (2019) Functional microbial landscapes. *In* Comprehensive Biotechnology 3rd ed. *Ed.* Moo-Young M. Elsevier: Pergamon.
- 51. Müller S, Johnson DR (2011) Application of cytomics to separate natural microbial communities by their physiological properties. *In* Handbook of Molecular Microbial Ecology Vol I: Metagenomics and Complementary Approaches. *Ed.* de Bruijn FJ. Wiley-Blackwell.
- 52. Johnson DR (2009) Transcriptome analysis using high-density oligonucleotide microarrays. *In* Handbook of Hydrocarbon and Lipid Microbiology Vol 5: Experimental Protocols and Appendices. *Eds.* Timmis KN, McGenity T, van der Meer JR, de Lorenzo V. Springer.

PRESENTATIONS

ORAL PRESENTATIONS AT SCIENTIFIC CONFERENCES, WORKSHOPS, UNIVERSITIES, OR RESEARCH INSTITUTIONS

- 1. Johnson DR (2021) Microbial spatial self-organization in a dynamic environment. International Workshop on Understanding Soil Microbiome for Agricultural Sustainability, Peking University, Beijing, China.
- 2. Ma Y, Johnson DR (2020) The effect of synthetic microbial spatial self-organization on the fate of antibiotic resistance genes. *Biofilms 9, Karlsruhe, Germany.*
- 3. Johnson DR (2020) Bifurcations and the creation of pattern diversity during microbial spatial self-organization. Discussion Meeting on Conflict and Cooperation in Cellular Populations, National Centre for Biological Sciences, Bangalore, India.
- 4. Johnson DR (2019) Spatial chaos and the self-organization of microbial communities. University of Exeter, Department of Biosciences, Penryn, UK.
- 5. Ciccarese D, Michali G, Borer B, Or D, Johnson DR (2019) Jackpot events prevent ecosystem collapse in the face of environmental fluctuations. 2019 Annual Assembly of the Swiss Society for Microbiology, Zürich, Switzerland.
- 6. Ma Y, Kow ZS, **Johnson DR** (2019) Consequences of microbial spatial self-organization on horizontal gene transfer. *Gordon Research Seminar on Microbial Population Biology, Andover, NH, USA.*
- 7. Johnson DR (2019) Spatial chaos and the self-organization of microbial communities. ETH Zürich, Evolution of Microbial Sociality Group, Zürich, Switzerland.
- 8. Ciccarese D, Micali G, Johnson DR (2019) Effect of fluctuating environmental conditions on spatial self-organization and community stability. 7th Swiss Microbial Ecology Meeting, Lausanne, Switzerland.
- 9. Ciccarese D, Michali G, Borer B, Or D, **Johnson DR** (2019) Jackpot events prevent ecosystem collapse in the face of environmental fluctuations. 12th Institute of Biogeochemistry and Pollutant Dynamics PhD Congress, Zürich, *Switzerland.*

- 10. Johnson DR (2018) The ecological and evolutionary consequences of microbial range expansions. University of Fribourg, Department of Biology – Ecology and Evolution, Fribourg, Switzerland.
- 11. Johnson DR (2018) Metabolic specialization and the causes of diversity in microbial ecosystems. *European Water Tech Week Leeuwarden 2018, Leeuwarden, Netherlands.*
- 12. Fenner K, Achermann S, Mansfeldt C, **Johnson DR** (2018) Linking the observed contaminant biotransformation potential of activated sludge communities with metatranscriptomic information. 15th International Symposium on Persistent Toxic Substances, Muttenz, Switzerland.
- 13. Mansfeldt C, Achermann S, Walser JC, **Johnson DR**, Fenner K (2018) The influence of the microbial residence time on the taxonomic and functional composition of microbial communities. *ETH Zürich Genetic Diversity Center Symposium*, *Zürich, Switzerland*.
- 14. Ciccarese D, Micali G, Johnson DR (2018) Effect of fluctuating environmental conditions on the spatial selforganization and emergent properties of a synthetic microbial biofilm. *Biofilms 8, Aarhus, Denmark*.
- 15. **Johnson DR**, Goldschmidt F, Caduff L (2018) Spatial chaos: Can we predict patterns of spatial self-organization within microbial communities? *17*th International Symposium on Microbial Ecology, Leipzig, Germany.
- 16. Johnson DR (2018) The ecological and evolutionary consequences of microbial range expansions. University of Geneva, Department of Microbiology and Molecular Medicine, Geneva, Switzerland.
- 17. Johnson DR (2018) The ecological and evolutionary consequences of microbial range expansions. *Microbiology Society Annual Conference 2018, Birmingham, England, UK.*
- 18. Ju F, McArdell C, Singer H, **Johnson DR**, Zhang T, Buergmann H (2017) Wastewater treatment plant resistomes are actively transcribed and shaped by bacterial composition and genetic exchange. *Eawag Symposium 2017, Dübendorf, Switzerland.*
- 19. Johnson DR (2017) Is biodiversity important for the functional performance of engineered systems? Bundesanstalt für Materialforchung und –prüfung, Berlin, Germany.
- 20. Johnson DR (2017) Is biodiversity important for the functional performance of engineered systems? 2017 ESA Annual Meeting, Portland, OR, USA.
- 21. Caduff L, Goldschmidt F, **Johnson DR** (2017) Evolution of spatial self-organization within denitrifying microbial communities depends on initial frequencies. 14th Symposium on Bacterial Genetics and Ecology, Aberdeen, Scotland, UK.
- 22. Johnson DR (2017) Why does cross-feeding occur within microbial communities? *Scientific Spring Meeting KNVM & NVMM 2017, Arnhem, Netherlands.*
- Ju F, Beck K, Yin X, McArdell C, Singer H, Johnson DR, Zhang T, Buergmann H (2017) Wastewater treatment plant resistomes are structured by microbial composition and actively transcribed at all process stages. 4th International Symposium on the Environmental Dimension of Antibiotic Resistance, Lansing, MI, USA.
- 24. Men Y, Achermann S, Helbling DE, **Johnson DR**, Fenner K (2016) Roles played by ammonia oxidizers of a nitrifying activated sludge community in micropollutant biotransformation as evidenced by inhibition experiments. *16*th *International Symposium on Microbial Ecology, Montreal, Quebec, Canada.*
- 25. Goldschmidt F, Regoes R, **Johnson DR** (2016) Metabolic interactions promote spatial population diversity in expanding microbial populations. 16th International Symposium on Microbial Ecology, Montreal, Quebec, Canada.

- 26. Goldschmidt F, Johnson DR (2016) Successive range expansions promote diversity in a microbial cross-feeding community. University of Bern, Division of Population Genetics, Bern, Switzerland.
- 27. Johnson DR (2016) The causes and consequences of metabolic specialization. University of Michigan, Department of Microbiology and Immunology, Ann Arbor, MI, USA.
- 28. Johnson DR (2016) The causes and consequences of metabolic specialization. University of Michigan, Department of Ecology and Evolutionary Biology, Ann Arbor, MI, USA.
- 29. Johnson DR (2016) The causes and consequences of metabolic specialization. University of Illinois, Department of Civil and Environmental Engineering, Urbana, II, USA.
- 30. Johnson DR (2016) The causes and consequences of metabolic specialization. *Massachusetts Institute of Technology, Department of Civil and Environmental Engineering, Cambridge, MA, USA.*
- 31. Johnson DR (2016) The causes and consequences of metabolic specialization. Harvard University, FAS Center for Systems Biology, Cambridge, MA, USA.
- 32. Johnson DR (2016) The causes and consequences of metabolic specialization. *Federal Institute of Hydrology,* Department of Aquatic Chemistry, Koblenz, Germany.
- 33. Johnson DR (2016) The causes and consequences of metabolic specialization. *Technical University of Denmark, Lyngby, Denmark.*
- 34. Johnson DR, Lilja EE (2015) The causes and consequences of metabolic specialization. 6th Swiss Microbial Ecology Meeting, Ascona, Switzerland.
- 35. Patsch D, Johnson DR (2015) Is there a cost to being fast? Exploring the relationship between the rate and productivity of wastewater treatment plant communities. 6th Swiss Microbial Ecology Meeting, Ascona, Switzerland.
- 36. Goldschmidt F, **Johnson DR** (2015) The evolution of spatial self-organization in expanding populations of microorganisms. 6th Swiss Microbial Ecology Meeting, Ascona, Switzerland.
- 37. Johnson DR, Goldschmidt F (2015) The evolution of spatial self-organization in expanding populations of microorganisms. 2015 Annual Assembly of the Swiss Society for Microbiology, Lugano, Switzerland.
- 38. Men Y, Han P, Helbling DE, **Johnson DR**, Wasgner M, Fenner K (2015) Links between ammonia oxidizers and micropollutant biotransformation. *International Water Association Specialist Conference: Micropol and Ecohazard, Singapore.*
- Weissbrodt DG, Wells GF, Goel RK, Laureni M, Bürgmann H, Johnson DR, Men Y, Fischer S, Minder A, Aluri S, Harhangi HR, Kipf M, Joss A, Christensson M, Nielsen JL, Morgenroth E (2015) A process engineering vista in the ecogenomics of aerobic-anaerobic ammonium oxidation. *International Water Association Specialist Conference: Nutrient Removal and Recovery, Gdansk, Poland.*
- 40. Johnson DR (2014) The causes and consequences of metabolic specialization. University of Glasgow, Infrastructure and Environment Division, Glasgow, Scotland, United Kingdom.
- 41. Johnson DR (2014) The causes and consequences of metabolic specialization. University of Neuchatel, Institute of Biology, Neuchatel, Switzerland.
- 42. Johnson DR (2014) Why are there so many microbial species? University of Michigan, Environmental Biotechnology Group, Department of Civil and Environmental Engineering, Ann Arbor, MI, USA.

- 43. Johnson DR (2014) The causes and consequences of metabolic specialization. Understanding Microbial Communities; Function, Structure and Dynamics. Isaac Newton Institute for Mathematical Sciences, Cambridge, England, United Kingdom.
- 44. **Johnson** DR (2014) When does metabolic specialization lead to more rapid substrate consumption? Roundtable discussion on Microbial Consortia for Controllable Outputs. 15th International Symposium on Microbial Ecology, Seoul, Republic of Korea.
- 45. Filippidou S, Bueche M, Wunderlin T, Junier T, Sauvain L, Roussel-Delif L, Jeanneret N, Dorador C, Molina V, Ioannidou A, Vargemezis G, **Johnson DR**, Junier P (2014) Survival strategy meets classical ecological theories: the case of endospore-forming bacteria in extreme environments. *15th International Symposium on Microbial Ecology, Seoul, Republic of Korea.*
- 46. Helbling DE, Fenner K, Lee TK, Scheidegger A, Johnson DR (2014) Can micropollutant biotransformation rates be predicted from the taxonomic compositions of wastewater treatment plant microbial communities? 15th International Symposium on Microbial Ecology, Seoul, Republic of Korea.
- 47. Men Y, Helbling DE, Johnson DR, Fenner K (2014) Linkage between micropollutant biotransformation rates and transcript abundance of functional genes in activated sludge microbial communities. 15th International Symposium on Microbial Ecology, Seoul, Republic of Korea.
- 48. Goldschmidt F, **Johnson DR** (2014) Mutualistic interactions maintain diversity in expanding microbial communities. *Heraus Seminar: Mechanisms, Strategies, and Evolution of Microbial Systems, Bad Honnef, Germany*
- Lilja EE, Ackermann M, Johnson DR (2014) Hostile environmental conditions accelerate the pace of molecular evolution and niche specialization in bacterial populations. 1st ASM Conference on Experimental Microbial Evolution. Washington D.C., USA.
- 50. Marchal M, Ackermann M, Johnson DR (2014) Mutualistic interactions promote the evolution of spatial structure in experimental populations of bacteria. *ETH Genetic Diversity Center Symposium, Zürich, Switzerland*.
- 51. Johnson DR (2013) The causes and consequences of biodiversity in experimental populations of microorganisms. Swiss Federal Institute of Aquatic Science and Technology (Eawag), Department of Fish Ecology, Kastanienbaum, Switzerland.
- 52. Johnson DR, Lee TK, Park J, Fenner K, Helbling DE (2013) Taxonomic and functional diversities predict the extents of substrate consumption by WWTP communities. 5th International Conference on Microbial Ecology and Water Engineering, Ann Arbor, MI, USA.
- 53. Johnson DR, Lee TK, Park J, Fenner K, Helbling DE (2013) Is richness important for the functional performance of microbial communities? *12thSymposium on Bacterial Genetics and Ecology, Ljubljana, Slovenia.*
- 54. Fenner K, Johnson DR, Honti M, Helbling DE (2013) Associations of micropollutant biotransformation potential of WWTP microbial communities with process and community characteristics. *International Water Association Specialist Conference: Micropol and Ecohazard, Dübendorf, Switzerland.*
- 55. Wells GF, Shi Y, Joss A, Bürgmann H, **Johnson DR**, Morgenroth E (2013) Comparing process performance and stability between replicate MMBR and suspended growth combined nitration-anammox reactors. *International Water Works Association: 9th International Conference on Biofilm Reactors, Pairs, France.*
- 56. Johnson DR (2013) Metabolic specialization and the causes of diversity in microbial ecosystems. University of Colorado, Department of Civil, Environmental, and Architectural Engineering, Boulder, CO, USA.
- 57. Johnson DR (2013) Metabolic specialization and the causes of diversity in microbial ecosystems. *Colorado School of Mines, Department of Environmental Science and Engineering, Golden, CO, USA.*

- 58. Johnson DR (2013) Metabolic specialization and the causes of diversity in microbial ecosystems. Yonsei University, School of Civil and Environmental Engineering, Seoul, Republic of Korea.
- 59. Johnson DR, Lee TK, Park J, Fenner K, Helbling DE (2013) Is diversity important for the functional performance of microbial communities? 5th Meeting of the Swiss Microbial Ecology Group, Murten, Switzerland.
- 60. Goldschmidt F, Johnson DR (2013) Mutualistic interactions maintain diversity in expanding microbial communities. 5th Meeting of the Swiss Microbial Ecology Group, Murten, Switzerland.
- 61. Marchal M, Ackermann M, Johnson DR (2013) The evolution and stabilization of microbial interactions in microbial ecosystems. 5th Meeting of the Swiss Microbial Ecology Group, Murten, Switzerland.
- 62. Johnson DR (2013) Metabolic incompatibilities promote diversification in microbial populations. *Swiss Federal Institute of Aquatic Science and Technology (Eawag), Department of Aquatic Ecology, Dübendorf, Switzerland.*
- 63. Johnson DR (2012) Is diversity important for the functional performance of microbial communities? *Swiss Federal Institute of Aquatic Science and Technology (Eawag), Department of Environmental Microbiology, Dübendorf, Switzerland.*
- 64. **Johnson DR**, Helbling DE, Lee TK, Park J, Ackermann M, Fenner K (2012) Micropollutant biotransformation rates are positively associated with microbial community richness and evenness in wastewater treatment plants. *14th International Symposium on Microbial Ecology, Copenhagen, Denmark.*
- 65. Helbling DE, Johnson DR, Fenner K (2012) From SBRs to metagenomics: seeking tools to predict biotransformation pathways of organic micropollutants. *Gordon Research Conference on Environmental Sciences: Water, Holderness, NH, USA.*
- 66. **Johnson DR**, Helbling DE, Lee TK, Park J, Fenner K (2012) The micropollutant biotransformation capacity of a microbial community is positively correlated with its diversity. *112*th General Meeting of the American Society for Microbiology, San Francisco, CA, USA.
- 67. Johnson DR (2011) Metabolic specialization and the assembly of microbial communities. *Workshop for the UM Biodegradation/Biocatalysis Database and Pathway Prediction System, Eawag, Dübendorf, Switzerland.*
- 68. Helbling DE, Fenner K, Ackermann M, **Johnson DR** (2011) Can biotransformation rates of microbial communities be linked to gene expression levels? 242nd National Meeting of the American Chemical Society, Denver, CO, USA.
- 69. Johnson DR, Helbling DE (2011) Predicting activity levels of functions from metatranscriptomics datasets. Minisymposium in Metagenomics – A Joint Workshop with CUSO, University of Neuchâtel, Neuchâtel, Switzerland.
- Helbling DE, Fenner K, Ackermann M, Johnson DR (2011) Biotransformation rates and gene transcript abundances: new insights on micropollutant degradation in WWTPs? 7th International Water Association Specialist Conference – Micropol and Ecohazard, Sydney, Australia.
- 71. Johnson DR, Ackermann M (2011) The emergence of cross-feeding within populations of denitrifying bacteria. 4th Congress of European Microbiologists FEMS, Geneva, Switzerland.
- 72. Johnson DR, Ackermann M (2011) The emergence of cross-feeding within populations of denitrifying bacteria. 111th General Meeting of the American Society for Microbiology, New Orleans, LA, USA.
- 73. Johnson DR, Ackermann M (2011) Cross-feeding and the spatial arrangement of microbial communities. *Mathematics of Microbes: Biological Details of the Evolving Cell, Imperial College, London, UK.*

- 74. Johnson DR (2011) Cross-feeding and the assembly of microbial communities. *Swiss Federal Institute of Aquatic Science and Technology (Eawag), Joint Workshop of the Departments of Environmental Toxicology and Environmental Microbiology, Dübendorf, Switzerland.*
- 75. Johnson DR, Ackermann M (2011) Why does cross-feeding occur within microbial communities? 4th Meeting of the Swiss Microbial Ecology Group, Engelberg, Switzerland.
- 76. Johnson DR, Ackermann M (2010) Why does cross-feeding occur within microbial communities? 13th International Symposium on Microbial Ecology, Seattle, WA.
- 77. Johnson DR (2010) Why does cross-feeding occur within microbial communities? Swiss Federal Institute of Technology (ETHZ), Institute of Microbiology, Salmonella Pathogenesis Group, Zürich, Switzerland.
- 78. Johnson DR (2009) Stressed out! A functional genomics approach for improving our understanding of bioremediation processes. *Swiss Federal Institute of Aquatic Science and Technology (Eawag), Institute Seminar, Kastanienbaum, Switzerland.*
- 79. Johnson DR (2009) Stressed out! A functional genomics approach for improving our understanding of bioremediation processes. *University of Minnesota, Department of Civil Engineering, Minneapolis, MN, USA*.
- 80. Johnson DR (2009) Stressed out! A functional genomics approach for improving our understanding of bioremediation processes. *University of Iowa, Department of Civil and Environmental Engineering, Iowa City, IA, USA*.
- 81. Johnson DR (2009) Toxicity of fungicides on freshwater microorganisms. Swiss Federal Office for the Environment (FOEN/BAFU), Bern, Switzerland.
- 82. Johnson DR (2009) Stressed out! A functional genomics approach for improving our understanding of bioremediation processes. *Swiss Federal Institute of Aquatic Science and Technology (Eawag), Dübendorf, Switzerland*.
- 83. Johnson DR*, Coronado E, van der Meer JR (2009) Characterization of genome-wide catabolic and stress expression: Transcriptome analysis of PAH-degrading bacteria. *Meeting of the Bacterial Abiotic Stress and Survival Improvement Network, Granada, Spain.*
- 84. Johnson DR, Sentchilo V, van der Meer JR (2008) Sequencing the plasmid mobilome of wastewater treatment plants. The Scientific Committee on Problems of the Environment (SCOPE), Workshop on Microbial Environmental Genomics, Changsha, China.
- 85. Johnson DR (2008) A functional genomics approach to improve chlorinated organic bioremediation processes. *Northwestern University, Department of Civil and Environmental Engineering, Evanston, IL, USA*.
- 86. Johnson DR (2007) A functional genomics approach to improve chlorinated organic bioremediation processes. University of Southern California, Joint Seminar to the Departments of Civil and Environmental Engineering and Biological Sciences, Los Angeles, CA, USA.
- 87. Johnson DR (2007) Characterizing stress responses in *Dehalococcoides* bacteria to improve bioremediation processes. *Max Planck Institute for Terrestrial Microbiology, Marburg, Germany.*
- 88. Johnson DR (2007) Characterizing stress responses in *Dehalococcoides* bacteria to improve bioremediation processes. *University of Lausanne, Department of Fundamental Microbiology, Lausanne, Switzerland.*
- 89. Johnson DR (2007) Characterizing stress responses in *Dehalococcoides* bacteria to improve bioremediation processes. University of California, Water Quality Seminar Series, Department of Civil and Environmental Engineering, Berkeley, CA, USA.

90. Johnson DR (2005) Expression profiling of the reductive dehalogenating bacterium Dehalococcoides ethenogenes strain 195. University of California, Water Quality Seminar Series, Department of Civil and Environmental Engineering, Berkeley, CA, USA.

POSTER PRESENTATIONS AT SCIENTIFIC CONFERENCES OR WORKSHOPS

- 91. Almoammar H, Johnson DR (2021) A synthetic ecology approach to elucidate the causes of microbial nitrous oxide release during denitrification. 13th Institute of Biogeochemistry and Pollutant Dynamics PhD Congress, Zürich, Switzerland
- 92. Ma Y, Kow ZS, Johnson DR (2020) Title: Microbial Ecology & Evolution MEE Virtual.
- 93. Goldschmidt F, Caduff L, Johnson DR (2019) Spatial chaos: can we predict patterns of spatial self-organization within microbial communities? 8th Congress of European Microbiologists, Glasgow, Scotland, UK.
- 94. Ma Y, Kow ZS, **Johnson DR** (2019) Consequences of microbial spatial self-organization on horizontal gene transfer. *Gordon Research Conference on Microbial Population Biology, Andover, NH, USA.*
- 95. Ma Y, **Johnson DR** (2019) Evolvability of spatial self-organization during microbial range expansion. 12th Institute of Biogeochemistry and Pollutant Dynamics PhD Congress, Zürich, Switzerland.
- 96. Dolinšek J, Johnson DR (2019) Eco-evolutionary dynamics of ATP-producing pathways in microbial communities. 15th Symposium on Bacterial Genetics and Ecology, Lisbon, Portugal.
- 97. Ciccarese D, Micali G, Johnson DR (2018) Effect of fluctuating environmental conditions on spatial self-organization and community stability. 17th International Symposium on Microbial Ecology, Leipzig, Germany.
- 98. Mansfeldt C, Achermann S, Johnson DR, Fenner K (2018) The influence of the mean-cell residence time on community composition and micropollutant biotransformation. *Gordon Research Conference on Environmental Sciences: Water, Holderness, NH, USA.*
- 99. Mansfeldt C, Achermann S, **Johnson DR**, Fenner K (2018) Modeling the deterministic influence of the cellular residence time on microbial community composition and function. *17th International Symposium on Microbial Ecology, Leipzig, Germany.*
- 100.Dolinšek J, **Johnson DR** (2018) Division of labor in sequential metabolic processes; an eco-evolutionary perspective. 17th International Symposium on Microbial Ecology, Leipzig, Germany.
- 101. Dolinšek J, Johnson DR (2017) Metabolite toxicity promotes the evolution of substrate cross-feeding, but depends on initial frequencies. SSM-SGM Annual Meeting and Assembly, Basel, Switzerland.
- 102. Dolinsek J, **Johnson DR** (2017) Metabolite toxicity promotes the evolution of substrate cross-feeding, but depends on initial frequencies. 3rd International SystemsX.ch Conference on Systems Biology.
- 103.Ciccarese D, Goldschmidt F, **Johnson DR** (2017) Temporal fluctuations destabilize interactions in cross-feeding microbial populations. *3rd International SystemsX.ch Conference on Systems Biology*.
- 104. Dolinšek J, **Johnson DR** (2017) Can resource competition slow down evolution? 14th Symposium on Bacterial Genetics and Ecology, Aberdeen, Scotland, UK.
- 105.Ciccarese D, Goldschmidt F, **Johnson DR** (2017) Temporal fluctuations destabilize interactions in cross-feeding microbial populations. 14th Symposium on Bacterial Genetics and Ecology, Aberdeen, Scotland, UK.

- 106.Caduff L, Goldschmidt F, **Johnson DR** (2016) Patterns of spatial self-organization within denitrifying microbial communities depends on initial frequencies. *16th International Symposium on Microbial Ecology, Montreal, Quebec, Canada*.
- 107.Patsch D, Failla TC, Garbani L, **Johnson DR** (2015) The importance of biodiversity for the functional performance of microbial communities. 13thSymposium on Bacterial Genetics and Ecology, Milan, Italy.
- 108. Johnson DR, Lilja EE (2015) Dividing metabolic labor among microbial cells accelerates the consumption of substrates that produce growth-inhibiting intermediates. 13thSymposium on Bacterial Genetics and Ecology, Milan, Italy.
- 109.Patsch D, Garbani L, Failla TC, **Johnson DR** (2015) Biodiversity controls on the functional performance of wastewater treatment plants. 8th Institute of Biogeochemistry and Pollutant Dynamics PhD Congress, Zürich, Switzerland.
- 110.Patsch D, Garbani L, Failla TC, Johnson DR (2015) Biodiversity controls on the functional performance of wastewater treatment plants. *Gordon Research Conference on Applied and Environmental Microbiology, South Hadley, MA, USA.*
- 111.Goldschmid F, Ackermann M, Johnson DR (2015) The evolution of spatial self-organization in expanding populations of microorganisms. *Forcasting Evolution? Calouste Gulbenkian Foundation, Lisbon, Portugal.*
- 112. Marchal M, Derksen S, Panke S, **Johnson DR**, Ackermann M (2014) A passive mutualistic interaction promotes the evolution of spatial structure within microbial populations. 2nd International SystemsX.ch Conference on Systems Biology, Lausanne, Switzerland.
- 113.Goldschmidt F, Johnson DR (2014) Mutualistic interactions maintain diversity in expanding microbial communities. 15th International Symposium on Microbial Ecology, Seoul, Republic of Korea.
- 114. Wells GF, Joss A, **Johnson DR**, Bürgmann H, Morgenroth E (2014) Into the biodiversity-environmental heterogeneityecosystem function nexus: the influence of aggregate architecture on microbial community structure and process stability in combined nitritation-anammox process variations. 15th International Symposium on Microbial Ecology, Seoul, Republic of Korea.
- 115.Lilja EE, Ackermann M, Johnson DR (2014) Substrate cross-feeding leads to more rapid substrate consumption as the toxicity of the metabolic intermediate increases. 7th Institute of Biogeochemistry and Pollutant Dynamics PhD Congress, Zürich, Switzerland.
- 116.Lilja EE, Ackermann M, Johnson DR (2013) Mutualistic coevolution promotes diversification in populations of crossfeeding microorganisms. *EMBL: New Approaches and Concepts in Microbiology, Heidelberg, Germany.*
- 117. Marchal M, Ackermann M, Johnson DR (2013) Mutualistic interactions promote the evolution of spatial structure in microbial populations. *EMBL: New Approaches and Concepts in Microbiology, Heidelberg, Germany.*
- 118. Wells GF, Shi YJ, Joss A, **Johnson DR**, Bürgmann H, Morgenroth E (2013) The influence of aggregate architecture and microbial community structure on process stability in combined nitritation-anammox process variations. *International Water Works Association: 2nd Water Research Conference, Singapore.*
- 119.Goldschmidt F, Johnson DR (2012) Cross-feeding interactions shape the spatial arrangement of denitrifying microbial communities. 14th International Symposium on Microbial Ecology, Copenhagen, Denmark.
- 120.Lilja E, Ackermann M, Johnson DR (2012) Adaptive evolution of *Pseudomonas stutzeri* under denitrifying conditions. 14th International Symposium on Microbial Ecology, Copenhagen, Denmark.
- 121. Marchal M, Ackermann M, **Johnson DR** (2012) Does spatial structure select for enhanced metabolite secretion between interacting cell types? 14th International Symposium on Microbial Ecology, Copenhagen, Denmark.

- 122. Helbling DE, Lee TK, Park J, Ackermann M, Fenner K, Kohler HP, **Johnson DR** (2012) Can the micropollutant biotransformation capacity of microbial communities be predicted from community diversity? *Gordon Research Conference on Environmental Sciences: Water, Holderness, NH, USA.*
- 123. Chèvre N, Johnson DR, van der Meer JR (2011) Risk assessment of fungicides and bactericides: are we using correct data? 21st SETAC Europe Annual Meeting, Milan, Italy.
- 124. Johnson DR, Ackermann M (2010) Why does cross-feeding occur within microbial communities? 2010 Annual Assembly of the Swiss Society for Microbiology, Zürich, Switzerland.
- 125. Johnson DR, Coronado E, van der Meer JR (2009) Integrating genomic and single-cell approaches to understand the effects of water stress on polycyclic aromatic hydrocarbon-degrading bacteria. 10th International Symposium on Bacterial Genetics and Ecology, Uppsala, Sweden.
- 126. Johnson DR, Coronado E, van der Meer JR (2009) Integrating genomic and single-cell approaches to understand the effects of water stress on polycyclic aromatic hydrocarbon-degrading bacteria. 2010 Annual Assembly of the Swiss Society for Microbiology, Lausanne, Switzerland.
- 127. Johnson DR, Coronado E, van der Meer JR (2009) Flow cytometric assays for measuring the effects of water stress on polycyclic aromatic hydrocarbon-degrading bacteria. *Meeting of the Bacterial Abiotic Stress and Survival Improvement Network, Granada, Spain.*
- 128. Johnson DR, Chèvre N, van der Meer JR (2009) Flow cytometric analysis of the effects of biocides on *Caulobacter* crescentus and a freshwater microbial community. 3rd Meeting of the Swiss Microbial Ecology Group, Einsiedeln, Switzerland.
- 129. Johnson DR, Coronado E, van der Meer JR (2008) Effects of water stress on the activity and viability of polycyclic aromatic hydrocarbon-degrading bacteria. 2008 Annual Assembly of the Swiss Society for Microbiology, Interlaken, Switzerland.
- 130. Johnson DR, VerBerkmoes N, Zinder SH, Alvarez-Cohen L (2008) Absolute comparison of transcriptomic and proteomic data using normalized spectral counts to estimate protein abundance. *108th General Meeting of the American Society for Microbiology, Boston, MA, USA*.
- 131. Johnson DR, Czechowska K, van der Meer JR (2008) Assessing the effects of fungicides on aquatic ecosystems using single-cell microbial isolation in agarose beads coupled with flow cytometric cell sorting. USGEB Biology meets Engineering Conference, Lausanne, Switzerland.
- 132. Johnson DR, Andersen GL, Zinder SH, Alaverz-Cohen L (2007) Temporal transcriptomic microarray analysis of the adaptation to stationary phase in *Dehalococcoides ethenogenes* strain 195. 107th General Meeting of the American Society for Microbiology, Toronto, Canada.
- 133. West KA, **Johnson DR**, Hu P, DeSantis TZ, Brodie EL, Feil H, Andersen GL, Zinder SH, Alvarez-Cohen L (2007) Comparative genomics of *Dehalococcoides ethenogenes* 195 and a *Dehalococcoides*-containing enrichment culture using a whole-genome microarray. 107th General Meeting of the American Society for Microbiology, Toronto, Canada.
- 134. Johnson DR, Andersen GL, Zinder SH, Alvarez-Cohen L (2006) Application of whole-genome microarrays to identify mRNA transcripts diagnostic of cobalamin stress in *Dehalococcoides ethenogenes* strain 195. *Superfund Basic Research Program Annual Meeting, San Diego, CA, USA.*
- 135. West KA, **Johnson DR**, Hu P, DeSantis TZ, Brodie EL, Feil H, Andersen GL, Zinder SH, Alvarez-Cohen L (2006) Comparative genomics of *Dehalococcoides ethenogenes* 195 and a *Dehalococcoides*-containing enrichment culture using a whole-genome microarray. *Superfund Basic Research Program Annual Meeting, San Diego, CA, USA*.

CURRICULUM VITAE

- 136. Johnson DR, He J, Hu P, Andersen GL, Zinder SH, Alvarez-Cohen L (2006) Whole-genome transcription analysis of Dehalococcoides ethenogenes strain 195 reveals a cobalamin (vitamin B₁₂) regulon. 106th General Meeting of the American Society for Microbiology, Orlando, FL, USA.
- 137. Johnson DR, He J, Lee PK, Brodie EL, Hu P, Andersen GL, Zinder SH, Alvarez-Cohen L (2006) Effect of exposure to cellfree spent media from different reductive dechlorinating mixed cultures on whole-genome transcription in Dehalococcoides ethenogenes strain 195. 106th General Meeting of the American Society for Microbiology, Orlando, FL, USA.
- 138. West KA, Johnson DR, He J, Lee PK, DeSantis TZ, Hu P, Andersen GL, Zinder SH, Alvarez-Cohen L (2006) Comparative transcriptomics of *Dehalococcoides ethenogenes* strain 195 and *Dehalococcoides* sp. strain BAV1. 106th General Meeting of the American Society for Microbiology, Orlando, FL, USA.
- 139.Johnson DR, Lee PK, Holmes VF, Alvarez-Cohen L (2005) Expression of the *tceA* reductive dehalogenase gene in an anaerobic enrichment culture. *105th General Meeting of the American Society for Microbiology, Atlanta, GA, USA*.
- 140.Lee PK, **Johnson DR**, Holmes VF, He J, Alvarez-Cohen L (2005) Assessing *tceA* expression as an indicator of trichloroethylene dechlorination activity. *105th General Meeting of the American Society for Microbiology, Atlanta, GA, USA*.
- 141. Holmes VF, He J, **Johnson DR**, Alvarez-Cohen L (2004) Assessing reductive dechlorination potential by quantifying *Dehalococcoides* reductase genes. *Superfund Basic Research Program Annual Meeting, Seattle, WA, USA*.
- 142. Johnson DR, Holmes VF, Alvarez-Cohen L (2004) Development of an internal reference technique for the quantification of mRNA by qPCR with application to the *tceA* reductive dechlorination gene. *104th General Meeting of the American Society for Microbiology, New Orleans, LA, USA.*
- 143. Johnson DR, Park J, Abriola LM, Kukor JJ (2002) Characterization of the effects of carbon starvation on the stability of biodegradation activity in toluene-oxidizing bacteria. 5th International Symposium on Subsurface Microbiology, Copenhagen, Denmark.
- 144. Park J, **Johnson DR**, Abriola LM, Kukor JJ (2002) Effect of carbon starvation on the stability of biodegradation activity in TCE-degrading toluene monooxygenase bacteria. *102nd General Meeting of the American Society for Microbiology, Salt Lake City, UT, USA*.

FUNDED RESEARCH PROJECTS

- Source: Eawag Discretionary Funds Project; Category SEED Title: Microbial invasion demographics: A general chromosomal barcoding method to monitor invasive microbial populations
 Pl: Dr. David R. Johnson (lead PI), Dr. Helmut Bürgmann Award: CHF 121,572 Project period: 2020 – 2021
- Source: Swiss National Science Foundation; Division Biology and Medicine Title: The evolutionary and ecological consequences of microbial range expansions PI: Dr. David R. Johnson (lead PI) Award: CHF 426,776 Project period: 2018 – 2021
- Source: Eawag Discretionary Funds Project; Category SEED Title: Understanding resistance gene flow during passage of wastewater treatment (RESIST-Flow) PI: Dr. Helmut Bürgmann (lead PI), Dr. David R. Johnson, Dr. Christa McArdell Award: CHF 170,687

Project period: 2015 – 2016

- Source: Swiss National Science Foundation; Division Biology and Medicine Title: Metabolic specialization and the causes of diversity in microbial ecosystems PI: Dr. David R. Johnson (lead PI) Award: CHF 447,101 Project period: 2014 – 2017
- 5. Source: SystemsX.ch program of the Swiss National Science Foundation; Category RTD Title: *Design and systems biology of functional microbial landscapes (MicroScapesX.ch)* PIs: Prof. Dr. Jan Roelof van der Meer (lead PI), Prof. Dr. Vassily Hatzimanikatis, **Dr. David R. Johnson**, Prof. Dr. Dani Or, Dr. Yok-Ai Que Award: CHF 2,530,587 Project period: 2015 – 2018
- Source: European Commission; Marie Curie Actions Initial Training Network Title: *Microbial resource management and engineering in the urban water cycle (MERMAID)* PIs: Prof. Dr. Barth Smets (lead PI), 13 others (including Dr. David R. Johnson) Award: €4,062,590 To Eawag: €542,000 Project period: 2014 – 2017
- 7. Source: Swiss National Science Foundation; Division Interdisciplinary Title: Can community transcription profiles be used to predict environmental biotransformation of organic contaminants? PIs: Dr. Kathrin Fenner (lead PI), Dr. David R. Johnson, Prof. Dr. Damian E. Helbling Award: CHF 265,116 Project period: 2013 – 2016
- Source: Eawag Discretionary Funds Project; Category SEED Title: The evolution and stabilization of mutualistic interactions in microbial ecosystems PIs: Dr. David R. Johnson (lead PI), Prof. Dr. Martin Ackermann Award: CHF 127,578 Project period: 2013 – 2014
- Source: Swiss National Science Foundation; Division Biology and Medicine Title: Cross-feeding and the maintenance of diversity in microbial ecosystems PI: Dr. David R. Johnson (lead PI) Award: CHF 288,000 Project period: 2011 – 2014
- Source: SystemsX.ch program of the Swiss National Science Foundation: Category IPP Title: Predicting the metabolic profile of cells from the topology of the universal metabolic network PIs: Dr. David R. Johnson (lead PI), Prof. Dr. Martin Ackermann Award: CHF 116,000 Project period: 2011 – 2013
- Source: Korean-Swiss Science and Technology Cooperation Title: Predicting the biotransformation capacities of microbial communities from their taxonomic composition Pls: Dr. David R. Johnson (lead PI), Prof. Dr. Joonhong Park, Dr. Kathrin Fenner Award: CHF 33,000 Project period: 2012 – 2013
- Source: Eawag Discretionary Funds Project: Category SEED Title: Can the biotransformation capacities of microbial communities be predicted?
 Pls: Dr. Kathrin Fenner (co-lead PI), Dr. David R. Johnson (co-lead PI), Prof. Dr. Martin Ackermann

Award: CHF 122,820 Project period: 2010 – 2011

GROUP MEMBERS

Postdoctoral Scientists

- Dr. Josep Ramoneda (2020 present) Supervisor: Dr. David R. Johnson (lead supervisor), Helmut Bürgmann Subsequent Position: Postdoctoral researcher, University of Colorado, Boulder, CO, USA
- Dr. Jan Dolinšek (2015 2018)
 Supervisor: Dr. David R. Johnson (lead supervisor)
 Subsequent Position: Project leader, Kompetenzzentrum Holz GmbH, Linz, Austria
- Dr. Feng Ju (2015 2018)
 Supervisors: Dr. Helmut Bürgmann (lead supervisor), Dr. David R. Johnson
 Subsequent Position: Assistant professor, Westlake University, Hangzhou, China
- Dr. Yujie Men (2014 2015)
 Supervisors: Prof. Dr. Kathrin Fenner (lead supervisor), Dr. David R. Johnson, Prof. Dr. Damian E. Helbling Subsequent Position: Assistant professor, University of Illinois, Urbana-Champaign, IL, USA
- 5. Dr. Marie Marchal (2012 2014) Supervisors: Dr. David R. Johnson (lead supervisor), Prof. Dr. Martin Ackermann
- Dr. George F. Wells (2011 2013)
 Supervisors: Prof. Dr. Eberhard Morgenroth (lead supervisor), Dr. Helmut Bürgmann, Dr. David R. Johnson Subsequent Position: Assistant professor, Northwestern University, Evanston, IL, USA
- Dr. Damian E. Helbling (2010 2011)
 Supervisors: Dr. Kathrin Fenner (co-lead supervisor), Dr. David R. Johnson (co-lead supervisor)
 Subsequent Position: Assistant professor, Cornell University, Ithaca, NY, USA

Ph.D. Students

- Hassan M. Almoammar (2020 present) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- Yinyin Ma (2018 present) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- Davide Ciccarese (2016 2020) (ETHZ)
 Supervisor: Dr. David R. Johnson (lead supervisor)
 Subsequent position: Postdoctoral researcher at Massachusetts Institute of Technology (MIT), Cambridge, MA, USA
- Deborah Patsch (2014 2017) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor) Subsequent position: Scientist at Microsynth AG, Switzerland
- Felix Goldschmidt (2011 2015) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor) Subsequent position: Scientist at Janssen Inc., Switzerland

Elin E. Lilja (2011 – 2015) (ETHZ)
 Supervisor: Dr. David R. Johnson (lead supervisor)
 Subsequent position: Postdoctoral researcher at the University of Edinburgh, Edinburg, Scotland, UK

M.Sc. Students

- Deepthi Vinod (2020 present) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- Samuel Bickel (2013) (ETHZ) Supervisors: Dr. David R. Johnson (lead supervisor), Prof. Dr. Martin Ackermann Subsequent Position: Ph.D. student at ETHZ, Zürich, Switzerland
- Johanna Otto (2012 2013) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor) Subsequent Position: Scientist at Eawag, Dübendorf, Switzerland
- Sofia van Moorsel (2012 2013) (University of Zürich) Supervisors: Dr. David R. Johnson (lead supervisor), Prof. Dr. Martin Ackermann Subsequent Position: Ph.D. student at the University of Zürich, Zürich, Switzerland

B.Sc. Students

- 1. Ella Flükiger (2021 present) (University of Applied Sciences and Arts Northwestern Switzerland) Supervisor: Dr. David R. Johnson (lead supervisor)
- 2. Julian Schmidt (2021 present) (University of Applied Forest Sciences Rottenburg, Germany) Supervisor: Dr. David R. Johnson (lead supervisor)
- 3. Zi Shan Kow (2019 2020) (Nanyang Technological University, Singapore) Supervisor: Dr. David R. Johnson (lead supervisor)
- Leon Nissen (2019) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- Valeria Merlo (2018 2019) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- Florian Rothenbühler (2018) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- Anita Zuidema (2017 2018) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- Claudia Keller (2013) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- Benedict Borer (2011 2012) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- 10. Anja Bernet (2010 2011) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)
- 11. Selina Müller (2010) (ETHZ) Supervisor: Dr. David R. Johnson (lead supervisor)

Gymnasium Students

 Caroline Morgenroth (2020 – present) Supervisor: Dr. David R. Johnson (lead supervisor)

Research Technicians

- Severin Stierli (2021 present) Supervisor: Dr. David R. Johnson (lead supervisor)
- 2. Lea Caduff (2015 present) Supervisor: Dr. David R. Johnson (co-lead supervisor), Dr. Tim Julian (co-lead supervisor)
- Teresa Colangelo Failla (2012 present) Supervisor: Dr. David R. Johnson (lead supervisor)
- Oliver Roos (2013 2014)
 Supervisor: Dr. David R. Johnson (lead supervisor)
- 5. Lara Pfister (2010 2011) Supervisor: Dr. David R. Johnson (lead supervisor)

Visiting Ph.D. Students

- Chujin Ruan (2021 present) PhD student from China Agricultural University, Beijing, China Supervisor while at Eawag: Dr. David R. Johnson Main supervisor: Prof. Dr. Gang Wang
- Tae Kwon Lee (2012) Ph.D. student from Yonsei University, Seoul, Republic of Korea Supervisor while at Eawag: Dr. David R. Johnson Main supervisor: Prof. Dr. Joonhong Park Current Position: Assistant Professor at Yonsei University, Seoul, Republic of Korea

Visiting Professors/Scientists

- Prof. Dr. Say Kee Ong (2020) Professor at Iowa State University, Ames, IA, USA in the Department of Civil, Construction and Environmental Engineering Host: Dr. David R. Johnson
- Dr. Eva Figuerola (2018 2019) Group leader in Microbial Ecology, National Scientific and Technical Research Council, Buenos Aries, Argentina Host: Dr. David R. Johnson
- Dr. Brian Rahm (2017) Research associate at Cornell University, Ithaca, NY, USA in the Department of Biological and Environmental Engineering Host: Dr. David R. Johnson
- Prof. Dr. Ramesh Goel (2014) Associate professor at the University of Utah, Salt Lake City, UT, USA in the Department of Civil and Environmental Engineering Hosts: Prof. Dr. Eberhard Morgenroth (lead host), Dr. David R. Johnson
- Prof. Dr. Ruth E. Richardson (2010) Associate professor at Cornell University, Ithaca, NY, USA in the Department of Civil and Environmental Engineering Host: Dr. David R. Johnson (lead host), Prof. Dr. Martin Ackermann

EXTERNAL ADVISING AND EXAMINING

Ph.D. Students

- 1. Tania Miguel Trabajo, Department of Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland
- 2. Hannah Kleyer, Department of Environmental Systems Science, ETHZ, Zürich, Switzerland
- 3. Robert L. Shahab, Institute of Chemical Sciences and Engineering, EPFL, Lausanne, Switzerland
- 4. Manupriyam Dubey, Department of Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland
- 5. Matthew R. Brown, School of Civil Engineering and Geosciences, Newcastle University, Newcastle, UK
- 6. Stefan Achermann, Department of Environmental Systems Science, ETHZ Zürich, Zürich, Switzerland
- 7. Aamani R. Boyanapalli, School of Architecture, Civil and Environmental Engineering, EPFL, Lausanne, Switzerland
- 8. Sevasti Filippidou, Institute of Biology, University of Neuchâtel, Neuchâtel, Switzerland
- 9. Fabio Polesel, Department of Environmental Engineering, Technical University of Denmark, Copenhagen, Denmark
- 10. Ye Tian, Laboratory of Microbiology, Wageningen University, Wageningen, Netherlands

REVIEWING ACTIVITIES

Peer-Reviewed Scientific Journals

Over thirty scientific journals, including Science, PNAS, Nature Communications, Nature Microbiology, Nature Ecology & Evolution, The ISME Journal, and Environmental Science & Technology.

- 1. Applied and Environmental Microbiology
- 2. Applied Microbiology and Biotechnology
- 3. Aquatic Microbial Ecology
- 4. Archives of Microbiology
- 5. Current Opinion in Biotechnology
- 6. Environmental Microbiology
- 7. Environmental Microbiology Reports
- 8. Environmental Science & Technology
- 9. Environmental Science & Technology Letters
- 10. Environmental Science: Processes & Impacts
- 11. Environmental Science: Water Research & Technology
- 12. Evolution
- 13. FEMS Microbiology Ecology
- 14. Functional Ecology
- 15. Frontiers in Microbiology
- 16. The ISME Journal
- 17. Microbial Biotechnology
- 18. Microbial Ecology
- 19. Molecular Ecology
- 20. Molecular Microbiology
- 21. Nature Communications
- 22. Nature Ecology & Evolution
- 23. Nature Microbiology
- 24. PeerJ
- 25. Philosophical Transactions of the Royal Society B
- 26. PLOS Computational Biology
- 27. PLOS ONE
- 28. Proceedings of the National Academy of Sciences USA
- 29. Science
- 30. Scientific Reports

31. Water Research

Grant Proposals

- 32. Swiss National Science Foundation
- 33. ETH Zürich Research Commission
- 34. British Research Council (EPSRC)
- 35. French National Agency for Research (ANR)
- 36. German Research Foundation (Deutsche Forschungsgemeinschaft)

CONFERENCE ORGANIZING

- 1. Head of the organizing committee for the Annual Assembly of Swiss Society for Microbiology, Virtual (2021)
- Member of the International Scientific Committee for the 11th International Conference on Environmental Engineering and Management, Muttenz, Switzerland (2021)
- 3. Member of the organizing committee for the Annual Assembly of Swiss Society for Microbiology, Zürich, Switzerland (2019)
- 4. Member of the organizing committee for the Annual Assembly of Swiss Society for Microbiology, Lausanne, Switzerelrand (2018)
- 5. Member of the organizing committee for the Eawag Symposium, Dübendorf, Switzerland (2017)
- 6. Member of the organizing committee for the Eawag Symposium, Dübendorf, Switzerland (2016)
- 7. Member of the organizing committee for the Eawag Symposium, Dübendorf, Switzerland (2015)
- 8. Member of the organizing committee for the 6th Swiss Microbial Ecology Meeting, Ascona, Switzerland (2015)
- 9. Member of the organizing committee for the Eawag Symposium, Dübendorf, Switzerland (2014)
- 10. Member of the organizing committee for the Eawag Symposium, Dübendorf, Switzerland (2013)
- 11. Member of the organizing committee for the 5th Swiss Microbial Ecology Meeting, Neuchatel, Switzerland (2013)
- 12. Member of the organizing committee for the Eawag Symposium, Dübendorf, Switzerland (2012)