

MARI-KAROLIINA HENRIKKA WINKLER
Curriculum Vitae

Civil and Environmental Engineering
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EDUCATIONAL HISTORY

Delft University of Technology, Delft, The Netherlands
PhD in Environmental Engineering
Date of graduation: 09/2012
Dissertation title: Magic granules
Exchange student for 9 months at the Columbia University, New York City, USA

University Duisburg-Essen, Duisburg, Germany
Master's in Chemistry
Date of graduation: 11/2006
Thesis title: Determination of the microbial community composition
conventional and membrane biological phosphorous removal system
Exchange student for 9 months at the University of British Columbia, Vancouver, Canada

University Duisburg-Essen, Duisburg, Germany
Bachelor's in Chemistry
10/2001 - 06/2004
Exchange student for 6 months at the University of New South Wales, Sydney, Australia

EMPLOYMENT HISTORY

University of Washington, Civil and Environmental Engineering
Seattle, WA, USA
Associate Professor 09/2021 - current
Assistant Professor 01/2015 - 08/2021

Ghent University, Biosystems Engineering
Ghent, Belgium
Marie Curie Postdoctoral Fellow 06/2013 - 02/2015

GMB international
Opheusden, The Netherlands
Consultant 09/2012 - 06/2013

Macherey-Nagel GmbH & Co. KG
Germany and Austria
Sales Manager 03/2007 - 07/2008

Profos
Regensburg, Germany
Marketing in the field of biotechnology 01/2007 - 02/2007

Biofilm Centre, Geo-microbiology
Duisburg, Germany
Lab Assistant 08/2005 - 12/2005

Institute for Surface-Biotechnology
Duisburg, Germany
Lab Assistant 01/2005 - 07/2005

Max Planck Institute for Bioinorganics
Muehlheim, Germany
Lab Assistant 12/2003 - 04/2004

Self-employed
Essen, Duisburg, Hamburg, Hannover, Cuxhaven, Germany
Event Management & Catering 02/1997 - 02/2004

AWARDS AND HONORS

Awards and Honors

1. People Choice award of the Equalize Program 2023
2. AEESP outstanding doctoral dissertation award 2023 for Stephany Wei / Mari Winkler, Association of Environmental Engineering and Science Professors, USA
3. Selection into the 2023 Equalize program, physical sciences cohort, featuring woman entrepreneurship across all universities in the USA
4. Outstanding Faculty Mentor Award, 06/2019, CEE, University of Washington, USA
5. Paul Busch Award, 09/2015, Water Environment Research Foundation, USA
6. Marie Curie - European Scientist of the month, 12/2015, European Commission
7. B-IWA-Industry award, 02/2014, Belgium International Water Association
8. International ISME/IWA BioCluster Award, 02/2014, International Society for Microbial Ecology and International Water Association
9. FWO Postdoctoral fellowship, 09/2014, Flemish Research Council, Belgium
10. Top 4 PhD students in water related research, 2012, TU Delft, The Netherlands
11. CH2M Hill/AEESP outstanding doctoral dissertation award, 06/2013, Association of Environmental Engineering and Science Professors, USA
12. Marie Curie Postdoctoral Fellowship, 09/2012, European Commission
13. Jaap van de Graaf award, 2013, Witteveen+Bos, The Netherlands
14. International Huber Technology Prize, 08/2012, Huber Technology Inc.
15. Top 4 PhD students in water related research, 2011, TU Delft, The Netherlands
16. Ruhrverband Fellowship - Wasserstipendium, 03/2006, Ruhrverband, Germany
17. Music Scholarship for piano and singing lessons, 1996, Music school Wunstrof, Germany

Travel grants

1. NSF/WERF travel grant for the IR² conference Forum, 2015, NYC, USA
2. FWO travel grant for the IWA-LET conference, 2014, Abu Dhabi, United Emirates
3. COST actions travel grant for the EcoSTP conference, 2014, Verona, Italy
4. FWO travel grant for the IWA Nutrient removal conference, 2013, Vancouver, Canada

5. FWO travel grant for the IcoN-conference, 2013, Tokyo, Japan
6. FWO travel grant for a biofilm workshop, 2013, Copenhagen, Denmark

AFFILIATIONS AND OTHER APPOINTMENTS

Director of Gut Engineered Treatment Using Polymers (GETUP) at the Center of Dialysis Innovation.

PUBLICATIONS

HI index: 34, i10-index: 48, # of citations as of 03/04/2024: 4286

<https://scholar.google.com/citations?user=EElbvqAAAAAJ&hl=en>"<https://scholar.google.com/citations?user=EElbvqAAAAAJ&hl=en>

Superscript legend: corresponding author[#]; graduate student at UW¹, undergraduate student at UW^{1*}, graduate student from overseas^{1‡}, technician at UW², and postdoc at UW³.

The journal's impact factor (IF) are listed at the end of each reference.

1. Prakrit Saingam³, Tanisha Jain², Addie Woicik¹, Bo Li³, Pieter Candry³, Raymond Redcorn³, Sheng Wang, Jonathan Himmelfarb, Andrew Bryan, Mari K. H. Winkler, 2024 Integrating Socio-Economic Vulnerability Factors Improves Neighborhood-Scale Wastewater-Based Epidemiology for Public Health Applications, *accepted in Water Research*, (IF: 13.4)
2. Nguyen Quoc, B.³, Peng, B., De Clippeleir, H. and **Winkler, M-K.H.**, 2024. Case study: Bioaugmenting the comammox dominated biomass from B-stage to enhance nitrification in A-stage at Blue Plains AWWTP. *Water Environment Research*, 96(3)
3. Pieter Candry^{3#}, Zach Flinkstrom^{1#}, **Winkler M-K.H.**, Wetlands harbor lactic acid-driven chain elongators, *Microbiology Spectrum*, 11;12(1):210523, (IF: 3.7)
4. W. Qin, S.P. Wei¹, Yue Zheng, E. Choi, X. Li, J. Johnston, X. Wan, B. Abrahamson¹, Z. Flinkstrom¹, B. Wang, H. Li, L. Hou, Q. Tao, W.W. Chlouber, X. Sun, M. Wells, L., K.A. Hunt, H. Urakawa, X. Tao, D. Wang, X. Yan, D. Wang, C. Pan, P.K. Weber, J. Jiang, J. Zhou, Y. Zhang, D.A. Stahl, B.B. Ward, X. Mayali, W. Martens-Habbena, **M-K H. Winkler**, Ammonia-oxidizing bacteria and archaea exhibit differential nitrogen source preferences, 2023 accepted in *Nature microbiology*, 9: 524–536 (IF: 28.3)
5. Bruce Godfrey², Ekaterina Gottshall³, Samuel Brysons³, Bo Li³, **Winkler M-K.H.**, Co-immobilization of AOA Strains with Anammox Bacteria in Three Different Synthetic Bio-granules Maintained under Two Substrate-level Conditions, *Chemosphere*. 342:140192,
6. Candry P.³, Chadwick G.L., Carvajal-Arroyo J.M., Lacoere T., **Winkler M-K.H.**, Ganigué R., Orphan V.J., Rabaey, K.[#], 2023, Trophic interactions shape the spatial organization of medium-chain carboxylic acid producing granular biofilm communities, *ISME*, 17, 2014–2022 (IF: 11.2)
7. Rubaba Mohammadi¹, Ghada Eshaq, **Winkler M-K.H.**, Arto Pihlajamki, 2023, Recent Development of Novel Magnetic Biochar Aluminum Cross-Linked Composite Beads for Preferential Phosphate Separation from Phosphate-Rich Effluents, accepted in *Journal of Water Process Engineering* (IF: 7.34)
8. Bo Li^{3#}, Bruce J. Godfrey², Raymond RedCorn³, Pieter Candry³, Zhiwu Wang, Ramesh Goel, **Winkler M-K.H.**, 2023, Mainstream Nitrogen Removal from Low Temperature and Low Ammonia Strength Municipal Wastewater using Hydrogel-encapsulated Comammox and Anammox, *Water Research*, 15:242:120303 (IF: 13.4)

9. B. Xing, N. Graham, B. Zhao, X. Li, Y. Tang, A. Kappler, H. Dong, **M-K.H. Winkler**, W. Yu, 2023, Goethite formed in the periplasmic space of *Pseudomonas* sp. JM-7 during Fe cycling enhances its denitrification in water, *Environmental Science & Technology*, 57, 30, 11096–11107 (IF: 11.4)
10. Yujin Kim, Zachary Flinkstrom¹, Pieter Candry³, **Winkler M-K.H.**, Jaewook Myunga, 2023, Resource availability governs Polyhydroxyalkanoate Accumulation and Diversity of Methanotrophic Enrichments from Wetlands, *Frontiers in Biotechnology* 11:1 (IF: 6.1)
11. Pieter Candry, Britt Abrahamson, David Allan Stahl, **Winkler M-K.H.**, 2023, Microbially mediated climate feedbacks from wetland ecosystems, *Global Change Biology*, 29(6) (IF: 13.2)
12. Glen T. Daigger, Jacqueline Kuo, Nicolas Derlon, Dwight Houweling, Jose A. Jimenez, Bruce R. Johnson, James P. McQuarrie, Sudhir Murthy, Pusker Regmi, Clement Roche, Belinda Sturm, Bernhard Wett, **Winkler M-K.H.**, Joshua P. Boltz, 2023, Biological and Physical Selectors for Mobile Biofilms, Aerobic Granules, and Densified-Biological Flocs in Continuously Flowing Wastewater Treatment Processes: A State-of-the-Art Review, *Water Research* 1:120245 (IF: 13.4)
13. Bo Li^{3#}, Bruce J. Godfrey, Raymond RedCorn³, Zhiwu Wang, Ramesh Goel, **Winkler M-K.H.**, 2023, Simultaneous Anaerobic Carbon and Nitrogen Removal from Primary Municipal Wastewater with Hydrogel Encapsulated Anaerobes and AOA-Anammox Coated Hollow Fiber Membrane, *Science of the Total Environment*, 883: 163696 (IF: 10.75)
14. Hong, S., **Winkler M-K.H.**, Wang Z. and Goel R., 2023, Integration of EBPR with mainstream anammox process to treat real municipal wastewater: process performance and microbiology, *Water Research*, 1:119758 (IF: 13.4)
15. Wang D., Hunt K.A.³ Candry P.³, Tao X., Wofford N.Q., Zhou J., McInerney M.J., Stahl D.A., Tanner R.S., Zhou A., **Winkler M-K.H.**, Pan C.[#], 2023, Cross-feedings, competitions, positive and negative synergies in a four-species synthetic community for anaerobic degradation of cellulose to methane, *MBio*, 14(2):0318922 (IF: 7.79)
16. Xie T^{1‡}, Liu X., Xu Y., Bryson S³, Zhao L., Huang K., Huang S., Li X., Yang Q., Dong H., **Winkler M-K.H.**, 2023, Coupling methanotrophic denitrification to anammox in a moving bed biofilm reactor for nitrogen removal under hypoxic conditions, *Science of the Total Environment*, 856:158795 (IF: 10.75)
17. Saingam P.³, Li B.³, Nguyen Quoc B.³, Jain T.³, Bryan A., **Winkler M-K.H.**, 2023, Wastewater surveillance of SARS-CoV-2 at intra-city level demonstrated high resolution in tracking COVID-19 and calibration using chemical indicators, *Science of the Total Environment*, 866:161467, (IF: 10.75)
18. Gotshall E.Y.³, Godfrey, B.³, Li Bo, Abrahamson B.¹, Qin W.², **Winkler M-K.H.**, 2023, Photoinhibition of Comammox reaction in *Nitrospira ionpinata* in a dose and wavelength dependent manner, *Frontiers in Microbiology*, V1:4964, (IF: 8.2)
19. Candry P.³, Godfrey B.³, Wang Z., Sabba F., Dieppa E., Fudge J.^{1*}, Balogun O., Wells G., **Winkler M-K.H.**, 2022, Tailoring polyvinyl alcohol-sodium alginate (PVA-SA) hydrogel beads by controlling crosslinking pH and time, *Scientific Reports Nature publishing group*, V12:20822 (IF: 4.99)
20. Zhang, W., Wei, S.P.^{1#}, **Winkler M-K.H.**, and Mueller, A.V., 2022. Design of a Soft Sensor for Monitoring Phosphorous Uptake in an EBPR Process, *published in ACS ES&T Engineering* (IF: assessed)
21. Cavanaugh S.K.^{1#}, Nguyen Quoc B.^{1#}, Jacobson E., Bucher R., Sukapantharam P., **Winkler M-K.H.**, 2022, Impact of nitrite and oxygen on nitrous oxide emissions from a granular sludge sequencing batch reactor, *Chemosphere*, 308(2):136378 (IF: 7.1)
22. Bao Nguyen Quoc^{1#}, Prakrit Saingam^{2#}, Raymond RedCorn^{2#}, John A. Carter^{1#}, Tanisha Jain^{2#}, Pieter Candry^{2#}, Meghan Gattuso, Meei-Li W. Huang, Alexander L. Greninger,

- John Scott Meschke, Andrew Bryan, **Winkler M-K.H.**, 2022, Case Study: Impact of Diurnal Variations and Stormwater Dilution on SARS-CoV-2 RNA Signal Intensity at Neighborhood Scale Wastewater Pumping Stations, *Environmental Science and Technology Water* (IF: 7.1)
23. Bryson S.J.^{2#}, Hunt K.H, Stahl D.A. **Winkler M-K.H.**, 2022, Metagenomic insights into competition between denitrification and DNRA within one-stage and two-stage partial-nitrification Anammox bioreactor configurations, *Frontiers in Microbiology*, 13:825104 (IF: 8.2)
 24. **Winkler M-K.H.** and van Loosdrecht M.C.M., 2022, Intensifying existing urban wastewater, *Science*, 375(6579): 377-378 (IF: 41.8)
 25. RedCorn, R.^{3#}, Jake, J.L., Gottshall^{3#}, E., Stahl, D.A., **Winkler M-K.H.**, 2022, Light-Weight Oxygen Supply for Portable Biological Nitrogen Removal from Urine and Sweat. *Chemical Engineering Journal Advances*, p.100235, (IF: TBD)
 26. Bojan Pelivanoski^{1‡}, Samuel Bryson^{3#}, Kristopher A. Hunt, Martin Denecke, David A. Stahl, **Winkler M-K.H.**, 2022, Application of pyritic sludge with an anaerobic granule consortium for nitrate removal in low carbon systems, *Water Research*, (IF: 13.4)
 27. Landreau, M.^{3#}, You, H.¹, Stahl, D., **Winkler M-K.H.**, 2022, Immobilization of active ammonia-oxidizing archaea in hydrogel beads, *Nature publishing group Clean Water*, (IF: 12.8)
 28. Ekaterina Gottshall^{3#}, Sam J. Bryson^{3#}, Kathryn I. Cogert, Matthieu Landreau^{3#}; Christopher J. Sedlacek, David A. Stahl, Holger Daims, 2021, **Winkler M-K.H.**, Sustained nitrogen loss in a symbiotic association of Comammox Nitrospira and Anammox bacteria, 117426 *Water Research*, (IF: 13.4)
 29. Wei S.P.^{1#}, Stensel D., Ziels R., Herrera S., Lee P.H., **Winkler M-K.H.**, 2021, Partitioning of nutrient removal contribution between granules and flocs in a hybrid granular activated sludge system, *Water Research*, 203, 117514, (IF: 13.4)
 30. Yin J., Xie T.^{1‡#}, Nguyen Quoc B.^{1#}, Hunt K.A, Tran K, Stahl D.A. **Winkler M-K.H.**, 2021, Pairing denitrifying phosphorus accumulating organisms with anaerobic ammonium oxidizing bacteria for simultaneous N and P removal, *Science of the Total Environment*, 15:787:147521 (IF: 10.45)
 31. Nguyen Quoc B.^{1#}, Armenta M.^{1#}, Carter J.A.^{1#}, Sukapantharam P., Bucher R., Bryson S.J.^{3#}, Stahl D.A., Stensel D., **Winkler M-K.H.**, 2021, An investigation into the optimal granular sludge size for simultaneous nitrogen and phosphate removal, *Water Research* 117119 (IF: 13.4)
 32. Wei S.^{1#}, Nguyen Quoc B.^{1#}, Calhoun J., **Winkler M-K.H.**, 2021, Application of Aerobic Kenaf Granules for Biological Nutrient Removal in a Full-scale Continuous Flow Activated Sludge System, *Chemosphere*, 271(1):129522, (IF: 7.1)
 33. Garg A.^{1#}, Stensel D.H., **Winkler M-K.H.**, 2021, Effect of waste activated sludge pretreatment methods to mitigate *Gordonia* foaming potential in anaerobic digestion, *Water and Environment Journal*, (1) 1747-6585, (IF: 2.9)
 34. Mingsheng J.^{1#}, **Winkler M-K.H.**, Volcke E., 2020, Elucidating the competition between heterotrophic denitrification and DNRA using the resource-ratio theory, *Environmental Science & Technology*, 54 (21):13953-13962, (Impact factor: 11.3)
 35. Gottshall E.Y.^{3#}, Bryson S.J.^{3#}, Cogert K.I, Landreau M.^{3#}, Sedlacek C.J., Stahl D.A., Daims H., **Winkler M-K.H.**, 2020, Sustained nitrogen loss in a symbiotic association of Comammox Nitrospira and Anammox bacteria, ID:336248, BIORXIV
 36. Nguyen Quoc B.^{1#}, Wei S.^{1#}, Armenta M.^{1#}, Bucher R., Sukapantharam P, Stahl D.A., Stensel D., **Winkler M-K.H.**, 2021, Aerobic granular sludge: Impact of size distribution on nitrification capacity, *Water Research*, 1(188):11644, (IF: 13.4)

37. Weissbrodt D., **Winkler M-K.H.**, Wells G., Responsible Science, 2020, Engineering and Education for Water Resource Recovery and Circularity, *Environmental Science Water Research & Technology*, 1(6), 1952-1966, (IF: 4.5)
38. Qin W., Zheng Y., Zhao F., Wang Y., Urakawa H., Martens-Habbena W., Liu H., Huang X., Zhang X., Nakagawa T., Mende D.R., Bollmann A., Wang B., Zhang Y., Amin S.A., Nielsen J.L., Mori K., Takahashi R., Armbrust E.V., **Winkler M-K.H.**, DeLong D.F., Li M., Lee P-H., Zhou J., Zhang C., Zhang T., Stahl D.A., Ingalls, A.E., 2020, Alternative strategies of nutrient acquisition and energy conservation map to the biogeography of marine ammonia-oxidizing archaea, Nature publishing group *ISME*, 14:2595–2609 (IF: 11.2)
39. Landreau M.^{2#}, Byson S.J.²; You H., Stahl D.A., **Winkler M-K.H.**, 2020, Effective nitrogen removal from ammonium-depleted wastewater by partial nitrification and anammox immobilized in granular and thin layer gel carriers, *Water Research*, 183(1): 116078, (IF: 13.4)
40. Wei, S.P.^{1#}, Stensel D., Nguyen Quoc B., Stahl D.A., Huang X., Lee P., **Winkler M-K.H.**, 2020, Flocs in Disguise? High Granule Abundance Found in Continuous-Flow Activated Sludge Treatment Plants, *Water Research*, 179:115865, (IF: 13.4)
41. Nishiguchi K.N.^{1#} and **Winkler M-K.H.**, 2020, Correlating Sludge Constituents with Digester Foaming Risk Using Sludge Foam Potential and Rheology, 81(5):949-960, *Water Science and Technology*, (IF 1.6) announced to be editor's choice
42. Chistoserdova L.[#], Zheng Y., Pesesky M., Zheng L., Huang J., **Winkler M-K.H.**, 2020, A complex interplay between nitric oxide, quorum sensing and a unique secondary metabolite tundrenone constitutes hypoxia response in *Methylobacter*, *mSystems*, 21;5(1): 770-19, (IF 7.5)
43. Pelivanoski, B.^{1‡}, Detmann, B., Ooms, K., Vasyukova, E., **Winkler M-K.H.**, Denecke, M., 2020, Design of a 1,000L pilot-scale airlift bioreactor for nitrification with application of a three-phase hydrodynamic mathematical model and prediction of a low liquid circulation velocity, *Chemical Engineering Research and Design*, 153(1):257-262, (IF 3.8)
44. Cogert K.^{1#}; Ziels R., **Winkler M-K.H.**, 2019, Reducing Cost and Environmental Impact of Wastewater Treatment with Denitrifying Methanotrophs, Anammox, and Mainstream Anaerobic Treatment, *Environmental Science and Technology*, 53(21): 12935-12944, (IF: 11.3)
45. Straka L.^{3#}, Summers A., Stahl D.A., and **Winkler M-K.H.**, 2019, Kinetic Implication of moving warm side-stream Anaerobic Ammonium Oxidizing Bacteria to cold mainstream wastewater, *Bioresource Biotechnology*, (288):121534, (IF: 11.9)
46. Straka L.^{3#}, Meinhardt K.², Bollmann A, Stahl D.A., **Winkler M-K.H.**, 2019, Affinity informs environmental cooperation between ammonia oxidizing archaea (AOA) and anaerobic ammonia oxidizing (Anammox) bacteria, Nature publishing group *ISME Journal*, 13(1):1997–2004, (IF: 10.3)
47. Vuono^{3#}, D.C., Read R.W., Hemp J., Sullivan B.W., Arnone J.A., Neveux I., Blank B., Staub C., Loney E., Miceli D., **Winkler M-K.H.**, Chakraborty D., Stahl D.A., Grzymalski J.J., 2019, Menaquinone-based nitrogen dissimilation by a dual-pathway Gram-positive Actinobacterium, 10(3), *Frontiers in microbiology*, (IF: 7.1)
48. **Winkler M-K.H.** and Straka L.^{3#}, 2019, New directions in biological nitrogen removal and recovery from wastewater, *Current Opinion in Biotechnology*, 57:50-55, (IF: 9.1)
49. Snauffer A.[#], Chauhan U., Cogert, K.¹, **Winkler M-K.H.**, Mueller A., 2018, Data Fusion for Environmental Process Control: Maximizing Useful Information Recovery under Data Limited Constraints, *IEEE Sensors Letters*, 3(1):1-3, (IF: 2.4)
50. Wei, S.P.^{1#}, van Rossum, F., van de Pol, G.J., **Winkler M-K.H.**, 2018. Recovery of phosphorus and nitrogen from human urine by struvite precipitation, air stripping and acid scrubbing: A pilot study, *Chemosphere*, 212(1):1030-1037, (IF: 7.1)

51. Xie T.^{1#}, Qi Y., **Winkler M-K.H.**, Wang D., Zhong Y., Hongxue A., Chen F., Yao F., Wang X., Wu J., Li X., 2018, Perchlorate bioreduction linked to methane oxidation in a membrane biofilm reactor: Performance and microbial community structure, *Journal of Hazardous Materials*, 357(5): 244-252. (IF: 6.4)
52. Jia M.^{1‡}, Castro-Barros C.M., **Winkler M-K.H.**, Eveline I.P., 2018, Effect of organic matter on the performance and N₂O emission of a granular sludge anammox reactor, *Water Research & Technology*, 7(4):1035-1046, (IF: 2.8)
53. Figdore B.A.^{1#}, Stensel D.H., **Winkler M-K.H.**, 2018, Bioaugmentation of sidestream nitrifying-denitrifying phosphorus-accumulating granules in a low-SRT activated sludge system at low temperature, *Water Research*, 135(1):241-250, (IF: 13.4)
54. **Winkler M-K.H.**[#], Meunier C., Henriot O., Mahillon J., Suárez-Ojeda M.E., Del Moro G., DeSanctis M., Di Iaconi C., Weissbrodt D.G., 2017, An integrative review of granular sludge for the biological removal of nutrients and recalcitrant organic matter from wastewater, *Chemical Engineering Journal*, 336(1):489–502, (IF: 10.6)
55. Figdore B.A.^{1#}, Stensel D.H., **Winkler M-K.H.**, 2017, Comparison of different aerobic granular sludge types for activated sludge nitrification bioaugmentation potential, *Bioresource Technology*, 251:189-196, (IF: 11.9)
56. Figdore B.A.^{1#}, **Winkler M-K.H.**, Stensel D.H., 2017, Bioaugmentation with Nitrifying Granules in Low-SRT Flocculent Activated Sludge at Low Temperature, 2017, *Water Environment Research*, 90(4):354-312, (IF: 1.4)
57. Castro-Barros C.M.^{1‡}, Ho L.T., **Winkler M-K.H.**, Volcke E.I.P., 2017, Integration of Methane Removal in Aerobic Anammox-Based Granular Sludge Reactors, *Environmental Technology*, 39(13):1615-1625, (IF: 1.8)
58. **Winkler M-K.H.**[#], Boets P., Hahne B.^{1*}, Goethals P., Volcke E.I.P., 2017, Effect of the dilution rate on microbial competition: r-strategist can win over k-strategist at low substrate concentration, *PLoS ONE* 12(3): 0172785, (IF: 3.2)
59. Castro-Barros C.M.^{1‡}, Jia M.¹, van Loosdrecht M.C.M., Volcke E.I.P., **Winkler M-K.H.**, 2017, Evaluating the potential for dissimilatory nitrate reduction by anammox bacteria for municipal wastewater treatment, *Bioresource Technology*, 233(1): 363–372, (IF: 11.9)
60. **Winkler M-K.H.**[#], Kröber E.^{1*}, Mohn W., Koch F., Frigon D., 2016 Comparison of microbial populations and foaming dynamics in conventional versus membrane enhanced biological phosphorous removal systems, *Water and Environment Journal*, 1(2):102–112, (IF: 1.3)
61. Vannecke T.^{1‡}, Nicolas B., **Winkler M-K.H.**, Gaelle S., Steyer J., Volcke, E.I.P., Influence of process dynamics on the microbial diversity in a nitrifying biofilm reactor, 2016, *Biotechnology and Bioengineering*, 113(9):1962-74, (IF: 4.5)
62. **Winkler M-K.H.**[#], Le, Q.H.¹, Volcke E.P.I, 2015, Influence of partial denitrification and mixotrophic growth of NOB on microbial distribution in aerobic granular, *Environmental Science and Technology*, 49(18):11003–11010, (IF: 11.3)
63. **Winkler M-K.H.**[#], Ettwig K.F., Vannecke T.P.W., Stultiens K., Bogdan A.¹, Kartal B. Volcke, E.P.I, 2015, Modelling simultaneous anaerobic methane and ammonium removal in a granular sludge reactor, *Water Research*, 73(1):323-331, (IF: 13.4)
64. **Winkler M-K.H.**[#], Bennenbroek M.H., Horstink F.H., van Loosdrecht M.C.M, van de Pol G-J., 2013, The biodrying concept: An Innovative Technology creating energy from sewage sludge, *Bioresource Technology*, 147(1):124-129, (IF: 11.9)
65. Zhang Z., **Winkler M-K.H.**[#], Wu Z., Lu H., Czapar G.F., Wang H, Zheng J, 2013, A Full-scale Housefly Larva (*Musca Domestica*) Bioconversion for Value-added Swine Manure Stabilization, *Waste Resources*, 31(2):223-31, (IF: 2.0)
66. **Winkler M-K.H.**[#], Kleerebezem R., Verhijen P., van Loosdrecht M.C.M., Microbial diversity differences within aerobic granular sludge and activated sludge flocs., 2013, *Applied Microbiology Biotechnology*, 97(16):7447-58, (IF: 5.6)

67. **Winkler M-K.H.**[#], Kleerebezem R., Strous M., Chandran K., van Loosdrecht M.C.M., 2013, Factors influencing granular density, *Applied Microbiology Biotechnology*, 97(16):7459-68, (IF: 5.6)
68. **Winkler M-K.H.**[#], Yang J., Kleerebezem R., Plaza E., Trela J., Hultman B., van Loosdrecht M.C.M., 2012, Nitrate reduction by organotrophic anammox bacteria in a partial nitrifying granular sludge and a moving bed biofilm reactor, *Bioresource Technology*, 114(1):217-23, (IF: 11.9)
69. **Winkler M-K.H.**[#], Bassin J.P., Kleerebezem R., van der Lans R.G.J.M., van Loosdrecht M.C.M., 2012, Temperature and salt effects on settling velocity in granular sludge technology, *Water Research*, 46(12):3897-902, (IF: 13.4)
70. **Winkler M-K.H.**[#], Bassin J.P., Kleerebezem R., Sorokin D., van Loosdrecht M.C.M., 2012, Unravelling the reasons for disproportion in the ratio of AOB and NOB in aerobic granular sludge, *Applied Environmental Biotechnology*, 94(6):1657-66, (IF: 3.4)
71. **Winkler M-K.H.**[#], Kleerebezem R., and van Loosdrecht. M.C.M., 2012, Integration of anammox into the aerobic granular sludge process for mainstream wastewater treatment at ambient temperatures, *Water Research*, 46(1):136-44, (IF: 13.4)
72. Bassin J.P., **Winkler M-K.H.**[#], Kleerebezem R., van Loosdrecht M.C.M., 2012, Improved phosphate removal by selective sludge discharge in aerobic granular sludge reactors, *Biotechnology and Bioengineering*, 45(11):3291-9, (IF: 4.5)
73. **Winkler M-K.H.**[#], Kleerebezem R., Khunjar W., de Bruin B., van Loosdrecht M.C.M., 2012, Evaluating the solid retention time of bacteria in flocculent and granular sludge, *Water Research*, 46(16):4973-80, (IF: 13.4)
74. **Winkler M-K.H.**[#], Bassin J.P., Kleerebezem R., van Loosdrecht M.C.M., van den Brand T.P.H., 2011, Selective sludge removal in a segregated aerobic granular biomass system as a strategy to control PAO-GAO competition at high temperatures, *Water Research*, 45(11):3291-9, (IF: 13.4)
75. **Winkler M-K.H.**[#], Kleerebezem R., Kuenen J.G., Yang J., van Loosdrecht M.C.M., 2011, Segregation of biomass in cyclic anaerobic/aerobic granular sludge allows the enrichment of Anaerobic Ammonium Oxidizing Bacteria at low temperatures, *Environmental Science and Technology*, 45(17):7330-7, (IF: 11.36)

Books and White Papers

1. Figdore B.A.^{1#}, Stensel H.D., Neethling J.B., **Winkler M-K.H.**, 2017, Aerobic Granular Sludge for Biological Nutrient Removal, White Paper Number NUTR5R14h, Water Environment and Reuse Foundation: Alexandria, VA
2. van Loosdrecht M.C.M., Nielsen P.H., Lopez-Vazquez C.M., Brdjanovic D., Publication date: 03/2016, 300 pages, Chapter: Granular settling velocity written by **Winkler M-K.H.**, IWA Publishing Group, ISBN13: 9781780404745
3. **Winkler M-K.H.**[#], van Rossum, F., Wicherink, B., 2013, Approaches to Urban Mining Recovery of Ammonium and Phosphate from Human Urine, G.I.T. Laboratory Journal
4. **Winkler M-K.H.**[#], Book: Magic granules, 2012, ISBN: 9789090269627

Articles and books under review

1. Aubrey Shenk, **Winkler M-K.H.**, Georgina Robinson. Chapter 24: International Nitrogen Assessment, *book: International Nitrogen Assessment (INA)*; a key output of International Nitrogen Management System (INMS) project.
2. Yue Zheng, Baozhan Wang, Ping Gao, Yiyang Yang, Xiaoquan Su, Daliang Ning, Qing Tao, Feng Zhao, Dazhi Wang, Yao Zhang, Meng Li, **Mari-K.H. Winkler**, Anitra E. Ingalls, Jizhong Zhou, Chuanlun Zhang, David A. Stahl, Jiandong Jiang, Willm Martens-Habbena, Wei Qin, A novel order-level lineage of ammonia-oxidizing Thaumarchaeota is widespread in marine and terrestrial environments, submitted to *ISME Journal*

3. Prakrit Saingam^{3#}, Tanisha Jain², Addie Woicik, Bo Li^{3#}, Pieter Candry³, Raymond Redcorn³, Sheng Wang, Jonathan Himmelfarb, Andrew Bryan, **Winkler M-K.H.**, Integrating Socio-Economic Vulnerability Factors Improves Neighborhood-Scale Wastewater-Based Epidemiology for Public Health Applications. In review at *Water Reseach*
4. Bao Nguyen Quoc^{3#}, Bo Peng, Haydee De Clippeleir, **Winkler M-K.H.**, Bioaugmenting the Comammox dominated biomass from B-stage to enhance nitrification in A-stage at Blue Plains AWWTP. Submitted to *Water Environment Research*
5. Bao Nguyen Quoc^{3#}, Shannon K. Cavanaugh¹, Kristopher A. Hunt, Samuel J. Bryson³, **Winkler M-K.H.**, Impact of aggregate size and dissolved oxygen concentration on the emission of greenhouse gas N₂O, submitted to *Water Research*
6. Samuel J. Bryson³, Bojan Pelivano^{1‡}, Pieter Candry³, Kris Hunt, **Winkler M-K.H.**, Identifying microbial functional guilds performing cryptic organotrophic and lithotrophic redox cycles in anaerobic granular biofilms, submitted to *ISME letters*

Conference papers from Students and Postdocs at University of Washington

1. Abrahamson B., Qin W., Candry P., Winkler M-K.H. #, *Hydroxylamine driven nitrate reduction by Comammox*, ICoN 2023, Princeton, USA
2. Abrahamson B., Cogert K.I., Shapiro M., Tran, K., Bryson S., Gottshall E., Redcorn R., Qin W., Candry P., Picioreanu C., Rittmann B., Stahl D., Winkler M-K.H. #, *Comammox and AOA Cooperate with Anammox in Counter-Diffusing Membrane Aerated Biofilm Reactors*, IWA Biofilms Conference, Phuket, Thailand, 2022.
3. Saingam P. *Neighborhood-level Wastewater surveillance of COVID-19 in Seattle*. Pacific NorthWest Economic Region's COVID-19 Recovery Call, Seattle, Virtual. *Oral Presentation*.
4. Candry P.^{#3}, Stahl D.A., Chistoserdova L., Pan. C., Mayali X. **Winkler M-K.H.**, *Bridging Scales: Conceptualizing Microbe-Climate Links in Wetland Ecosystems*, DOE-PI meeting, virtual due to the pandemic, 02/2021
5. Wei S., B. Nguyen Quoc P.H. Chang J. Calhoun, D.A. Stahl, P.H. Lee, **Winkler M-K.H.** (2021). Naturally Occurring Granules and Application of Mobile Organic Biofilm in Continuous Flow Systems. IWA Biofilm Reactors Conference, Notre Dame, Virtual. *Oral Presentation*.
6. Nguyen Quoc B., Wei S., Armenta M., Bucher B., Sukapanpotharam P., Stahl D., **Winkler M-K.H.** Effect of Granule Sizes on Ammonia Oxidation Rates. WEFTEC 2020. 2020/10/5, Virtual. Doi: 10.2175/193864718825157397
7. Pelivanoski B., Nettmann E., Ooms K., Vasyukova E., **Winkler M-K.H.**, Denecke M., *The impact of shear force and hydrogen peroxide on an ammonium oxidizing biofilm system*, IWA Biofilm conference, Santiago, Chile, 2019, accepted as podium presentation but due conference was canceled due to political instabilities
8. Cogert, K.¹, Landreau, M.², Bryson, S.², Stahl, D.A., **Winkler M-K.H.**, *Development of Archaeon-Anammox Granular Sludge using Activated Carbon*, International Conference on Nitrification and Related Technologies, Xiamen, China, 10/2019, *Recognitions*: Top 3 Abstract and University of Washington Graduate Student Conference Travel Award
9. Wei, S.¹, Stensel H.D., Quoc B.N., Lee P.-H. and **Winkler M-K.H.**, 2019, *What's in Your Sludge? Hunting for Baby Granules in Full-Scale Activated Sludge Treatment Plants*, IWA Leading Edge Technology Conference on Water and Wastewater Technologies, Edinburgh, UK, 10/2019
10. Wei, S.¹, Stensel H.D., Quoc B.N, Lee P.H., **Winkler M-K.H.**, *Baby Granules in Full-Scale Activated Sludge Treatment Plants*, WEFTEC, Chicago, USA, 09/2019

11. Armenta M.¹, Stensel H.D., **Winkler M-K.H.**, *Super Poop: Better, Faster, Stronger! Improving Existing Wastewater Treatment Plants with Aerobic Granular Sludge*, Science Slam, Seattle, USA, Recognition: 1st Prize / Audience Favorite, 06/2019
12. Armenta M.¹, Stensel D.H., Sukapanpotharam P., Bucher B. Nguyen Quoc B., **Winkler M-K.H.**, *Operation and Performance of Sidestream Aerobic Granular Sludge Nitrifying Reactor*, WEF Nutrient Removal and Recovery Symposium, Minneapolis, Minnesota, USA, 05/2019
13. Armenta M.¹, **Winkler M-K.H.**, Stensel D.H., Sukapanpotharam P., Bucher B., *Aerobic Granular Sludge Bioaugmentation for Pilot Continuous Flow Wastewater Treatment System*, Water & Environment Student Talks University of British Columbia, Canada, Recognition: People's Choice Award for Best Speaker/Presentation, 10/2018
14. Xie T.¹, and **Winkler M-K.H.**, *Simultaneous Nitrogen and Phosphorus Removal from Wastewater by Integrating Anammox, NDAMO and dPAOs in a Combined System*, Emerging Researchers National Conference, Seattle, USA, 10/2018
15. Figdore B.A.¹, Stensel H.D., **Winkler M-K.H.**, Armenta M., Bucher B., Sukapanpotharam P., Smyth J., *Aerobic Granular Sludge Bioaugmentation in Low-SRT Flocculent Activated Sludge: Bench-Scale Demonstration and Pilot Testing*, WEFTEC, New Orleans, USA, 09/2018
16. Straka L.², Stahl D.A., **Winkler M-K.H.**, *Anammox Fundamentals*, WEFTEC, New Orleans, USA, 09/2018
17. Nishiguchi D.K., **Winkler M-K.H.**, *Unlocking Digester Foaming Issues through Research*, BioSolid conference, Lake Celan, USA, 09/2018
18. Jia M.¹, Castro-Barros, C.M.¹, **Winkler M-K.H.**, Volcke E.I.P., *Effect of organic matter on the performance and N₂O emission of a granular sludge anammox reactor*, IWA World Water Congress & Exhibition, Tokyo, Japan, 07/2018
19. Jia M.¹, Castro-Barros C.M., **Winkler M-K.H.**, Volcke E.I.P., 2018, *Effect of organic matter on the performance and N₂O emission of a granular sludge anammox reactor*. Granular Sludge Conference, Delft, the Netherlands, 06/2018
20. Wei S.¹, H. D. Stensel, **Winkler M-K.H.**, *Phosphorus Recovery Using Aerobic Granular Activated Sludge Process Without Anaerobic Digestion*, WEFTEC, Chicago, USA, 09/2017
21. Figdore B.A.¹, Stensel H.D., **Winkler M-K.H.**, *Achieving nitrification-denitrification in a low-SRT activated sludge system through bioaugmentation of sidestream nitrifying granules*, Water Environment Federation / International Water Association Nutrients Conference, Chicago, Illinois, USA, 08/2017
22. Figdore B.A.¹, Stensel H.D., **Winkler M-K.H.**, Neethling, J.B., *Aerobic Granular Sludge for Biological Nutrient Removal*, Water Environment Federation/International Water Association Nutrients Conference. Denver, Colorado, USA, 07/2017
23. Castro-Barros¹ C.M., Jia M., van Loosdrecht M.C.M., Volcke E.I.P., **Winkler M-K.H.**, 2016, *Evaluating the potential for nitrate reduction through DNRA by anammox bacteria for municipal wastewater treatment*, 21st European Nitrogen Cycle Meeting (ENC21), Norwich, UK, 06/2016
24. Figdore B.A.¹, Stensel H.D., **Winkler M-K.H.**, 2015, *Sidestream Growth of Nitrifying and Nitrifying-Denitrifying Granular Sludge for Use in Mainstream Nitrification Bioaugmentation*, WEFTEC, Chicago, Illinois, USA, 09/2015
25. Figdore B.A.¹, Stensel H.D., **Winkler M-K.H.**, *Aerobic Granular Sludge for Wastewater Treatment*, Pacific Northwest Clean Water Association annual conference. Boise, Idaho, USA, 05/2014
26. Figdore B.A.¹, Stensel H.D., **Winkler M-K.H.**, *Aerobic Granular Sludge for Wastewater Treatment*, Water Environment Student Talks, University of British Columbia, Canada, 03/2014

Patents

1. US Provisional patent 3915-P1301US.PRO, Filed 4/26/2023, entitled “Increasing Carbon storage capacity and pollutant remediation in soils using applied hydrogel methods”
2. US Patent Application 63/297,549. Filed 1/5/2023, entitled “Microbial embedded hydrogel beads and methods of use”.
3. US Provisional Patent Application 63/477,360. Filed 12/27/2022, entitled “Algal hydrogels”.
4. US Provisional Patent Application 63/434,058. Filed 12/20/2022, entitled “Hydrogel Production Instruments and Techniques”.
5. U.S. Provisional Patent 63/419,798. Filed 10/27/2022, entitled “Hydrogel films and coatings for botanical specimens and methods of using and making the same”.
6. US provisional patent application 63/385,182 filed 11/28/2022, entitled: “Wastewater treatment devices, systems, and methods”.
7. US Patent Application 63/314,006 filed 2/25/2022, entitled: "Uremic toxin, Uremic bound toxin and phosphate removal from the gut with gel encapsulated bacteria".
8. US provisional patent 63/297,549, filed Jan 7th 2022, entitled: “microbial embedded hydrogel beads.”
9. Full Patent Application 17/284,759 filed 4/12/2021, entitled: System and method for removing uremic toxins from a patient’s body
10. US provisional patent application 62/914,884, entitled: “Hydrogels for the entrapment of bacteria.”
11. US provisional patent application 62/960,494, entitled: “Microbe-based systems, compositions and methods for management of fluid contaminants.”
12. US provisional patent application 62/48769 entitled: “Membrane coating.”
13. US Provisional patent Application 63/165,017 entitled: “Hydrogel Engineering.”
14. US Provisional patent Application Entitled: “Heated biological growth surfaces for higher microbial activity in bioprocessing.”

Other significant research dissemination (web sites, software, Wikis, etc.)

1. <https://aeespfoundation.org/awards/bouwer-outstanding-doctoral-dissertation>
2. <https://www.youtube.com/watch?v=uYLIwebK4FQ>
3. <https://equalizeprogram.org/schedule/>
4. https://www.linkedin.com/posts/osage-university-partners_womens-history-month-highlight-mari-activity-7042524995071205377-ALkU?utm_source=share&utm_medium=member_desktop
5. www.biobeadsolutions.com
6. <https://cdi.washington.edu/people/mari-winkler/>
7. KUOW - These scientists are fighting the pandemic with sewage
8. <https://www.youtube.com/watch?v=FJY-pxrzsc>
9. <https://www.youtube.com/watch?v=9ECRIEa-gdI&t=5s>
10. <https://www.washington.edu/news/2021/01/12/video-detecting-covid-19-in-wastewater/>
11. <https://www.kiro7.com/video/?id=fb620d34-6341-402e-96bc-428598326cbd>
12. www.ce.washington.edu/news/article/2021-01-07/detecting-COVID-19-in-wastewater
13. <https://www.ce.washington.edu/node/815>
14. <https://www.ce.washington.edu/node/737>
15. <https://www.ce.washington.edu/node/432>
16. <https://www.wateronline.com/doc/water-environment-research-foundation-presents-paul-l-busch-award-0001>
17. <https://www.facebook.com/Marie.Curie.Actions/photos/allow-us-to-introduce-you-to-our-former-msca-if-fellow-of-the-week-mari-winklerm/1003431629730370/>

18. <https://www.youtube.com/watch?v=Hz8X3ioyUlc&t=11s>
19. <https://wdrc.kaust.edu.sa/Conference-2017/Pages/Speaker.aspx?si=15>
20. <https://www.youtube.com/watch?v=YTpZL-r5yD>
21. <https://www.aeesp.org/awards/2013/mari-winkler>
22. <https://www.huber.de/press/huber-news/news-article/news/the-winners-of-the-huber-technology-prize-2012-future-water-have-been-determined.html>
23. http://www.biwa.be/awards?field_awyear_value%5Bvalue%5D%5D%5Dyear%5D=
<https://www.witteveenbos.com/news/jaap-van-der-graaf-award-to-be-replaced-with-new-student-prize/>

MISCELLANEOUS

Name of Organization	Start Date	End Date	Number of Days	Description of Activity
Captive BioSolutions and subsidiary Biobead	3/1/2023	2/28/2024	3	I started a company called Captive BioSolutions and subsidiary Biobead.

OTHER SCHOLARLY ACTIVITY

Invited speaker at conferences, lectures, and seminars (Financed Talks)

1. Invited Speaker, Practitioner conference Madison Wisconsin Water association, 2024
2. Invited Speaker, ASM Microbe conference 2023, Houston Texas, 6/2023
3. Key Note Speaker, ICON conference 2023, Princeton, USA, 07/2023
4. Invited Speaker, WEF Short-cut nitrogen removal conference, Newport News, USA, 12/2022
5. Invited Guest Speaker, Northwestern University, Evanston, 11/2022
6. Key Note Speaker, Leading Edge Technology conference, Reno, USA, 03/2022
7. Invited lecture, Microbiology of aerobic granular sludge, Georgia Tech, virtual, 03/2022
8. Seminar speaker at online WEF knowledge seminar, Continuous Aerobic Granular Sludge: Generation of Granules, 04/2021
9. Lecture at University of British Columbia, (virtual due to the pandemic), *Guest speaker: Hydrogel technology*, 03/2021
10. Water Research Foundation, Nutrients Treatment: Intensification, Reliability, and Efficiency Virtual Research Summit, virtual 3/2021
11. Centre for Dialysis Innovation, Seattle, USA, *Invited speaker: Mitigation of uremic toxins*, 01/2021
12. Guest Lecture at the University of Oklahoma, Guest speaker: N₂O emissions from wetlands, 11/2021
13. Guest Lecture at Korea Advanced Institute of Science and Technology, Innovation in the water sector, 09/2021
14. Guest lecture, Beijing University of Technology, N₂O emissions from natural and engineered systems, 09/2021
15. Conference Speaker, IWA virtual conference, Professor Jenkin's tribute, 10/2021
16. IWA Biofilms Conference (virtual due to the pandemic), *Speaker: State of the art of aerobic granular sludge*, 12/2020

17. Arizona State University (virtual due to the pandemic), *Guest speaker: Water treatment technology: Quo vadis?* 11/2020
18. Seattle University, Seattle, USA, *Guest lecture: Short cut nitrogen removal*, 01/2020
19. Centre for Dialysis Innovation, Seattle, USA, *Invited speaker: Mitigation of uremic toxins*, 01/2020
20. Oceanography Department, University of Washington, Seattle, USA, *Guest lecture: Nitrogen cycling in wastewater treatment*, 10/2019
21. PNCWA conference, Boise, USA, *Invited speaker: Microbiology of aerobic granular sludge*, 10/2018
22. Northeastern University, Boston, USA, *Online Guest lecture: Microbial ecology in aerobic granular sludge*, 08/2019
23. ISME conference, Leipzig, Germany, *Invited speaker: Magic world of spherical biofilm systems*, 08/2018
24. Virginia Water Environment Association Education conference, Richmond, USA, *Invited speaker: Expanding the world of aerobic granular sludge technology*, 05/2018
25. University of California, Pasadena, USA, *Invited Seminar: Nitrogen cycling in environmental systems*, 04/2018
26. University of California Santa Barbara, USA, *Invited Guest Lecture: Microbiology of aerobic granular sludge*, 09/2017
27. Nutrient Removal Webinar, *Online lecture: Integrating aerobic granular sludge technology in existing infrastructure*, 12/2017
28. Institute for disease modelling, Bellevue, USA, *Invited seminar: Introduction to pathogens in wastewater*, 07/2017
29. ASM Microbe, New Orleans, USA, *Microbes in Wastewater Treatment and Bioremediation*, USA, 06/2017
30. AEESP conference, Ann Arbor, USA, *Seminar: Responsible science, education and engineering for resource recovery and circularity*, 06/2017
31. King Abdulla University of Science and Technology, Jeddah, Saudi Arabia, *Invited speaker: Expanding the World of Aerobic Granular Sludge Technology*, 03/2017
32. FWEA Wastewater Process, Miami, USA, *Aerobic granular sludge*, 02/2017
33. University of Minnesota, *Invited seminar: Microbiology of spherical biofilms*, Saint Paul, USA, 12/2016
34. University of Southern California, Los Angeles, USA, *Invited seminar: aerobic granular sludge*, 08/2016
35. FWEA Wastewater Process, Tampa, USA, *Invited speaker: Expanding the World of Aerobic Granular Sludge Technology*, 02/2016
36. University of South Florida, Tampa, USA, *Invited seminar: aerobic granular sludge*, 02/2016
37. Resource Recovery Workshop, King County Solid Waste division, Seattle, USA, *Invited workshop: Resource recovery from Wastewater*, 9/2015
38. Lecture at the Sanitation District of LA, Los Angeles, USA, *Expanding the World of Aerobic Granular Sludge Technology*, 09/2015
39. Wastewater Treatment Symposium, Yakima, USA, *Invited workshop: Introduction to aerobic granular sludge and Anammox technology*, 09/2015
40. TEDx talk ULB, Brussels, Belgium, *Invited lecture: How to generate energy from human waste?* 06/2014
41. Anammox workshop at Northwestern University, Chicago, USA, *Workshop: Segregation in Anammox granular sludge bioreactors*, 03/2015
42. Workshop at EAWAG/ETH, Zurich, Switzerland, *Invited seminar: Molecular tools used to define microbial community structure in granules*, 11/2014

43. Workshop at IWA World Water Conference, Lisbon, Portugal, *Workshop speaker: Aerobic granular sludge*, 09/2014
44. IWA Nutrient Recovery Workshop, Vancouver, Canada, *Workshop speaker: Microbiology of aerobic granular sludge*, 07/2014
45. ICON3 conference, Tokyo, Japan, *Invited plenary speaker: Magic granules*, 09/2013
46. 19th European N cycle meeting, Ghent, Belgium, *Invited plenary speaker: Magic granules*, 01/2014
47. Radboud University, Nijmegen, The Netherlands, *Invited seminar: Combining aerobic ammonium oxidation with methane oxidation*, 06/2013
48. Cornell University, Ithaca, NY, USA, *Invited lecture: Introduction to aerobic granular sludge*, 12/2012
49. IFAT Leading trade fair for environmental technology, Munich, Germany, *Integration of anammox into the aerobic granular sludge process for mainstream wastewater treatment at ambient temperatures*, 09/2012
50. Technical University Munich, Munich, Germany, *Selective sludge removal in a segregated aerobic granular biomass system as a strategy to control PAO-GAO competition at high temperatures*, 07/2012
51. University of Cape Town, Cape Town, South-Africa, *Invited lecture: Introduction to aerobic granular sludge*, 05/2012

Participation in conferences with oral presentation

1. **Winkler M-K.H.#**, Short cut nitrogen removal with a hollow fiber membrane, WEF/IWA IPE Workshop, Portland, USA, 06/2023
2. **Winkler M-K.H.#**, Stahl D.A., Chistoserdova L., Pan. C., Mayali X., Integrating single-cell wetland microbiome structure, function, and activity to ecosystem-scale biogeochemical fluxes, *DOE PI meeting*, (virtual due to the pandemic), USA, 02/2021
3. **Winkler M-K.H.#**, Stahl D.A., Chistoserdova L., Pan. C., Mayali X., Integrating single-cell wetland microbiome structure, function, and activity to ecosystem-scale biogeochemical fluxes, *DOE PI meeting*, Washington DC, USA, 02/2020
4. **Winkler M-K.H.#**, Stahl D.A., Mueller A., Ismagilov R., Implementation of a synthetic Anammox bio-granular technology in the main wastewater treatment line, *Brics DARPA PI conference*, Santa Barbara, USA, 04/2019
5. **Winkler M-K.H.#**, Stahl D.A., Mueller A., Ismagilov R., Implementation of a synthetic Anammox bio-granular technology in the main wastewater treatment line, *Brics DARPA PI conference*, Charleston, USA, 04/2018
6. **Winkler M-K.H.#**, Stahl D.A., Mueller A., Ismagilov R., Implementation of a synthetic Anammox bio-granular technology in the main wastewater treatment line, *Brics DARPA PI conference*, Austin, USA, 04/2017
7. **Winkler M-K.H.#**, Ettwig K.F., Vannecke T.P.W., Stultiens K., Bogdan A., Kartal B. Volcke, E.P.I, 2015, Modelling simultaneous anaerobic methane and ammonium removal in a granular sludge reactor, *IWA Leading Edge Technology (LET) Conference*, Hongkong, China, 05/2015
8. **Winkler M-K.H.#**, Ettwig K.F., Vannecke T.P.W., Stultiens K., Bogdan A., Kartal B. Volcke, E.P.I, Investigating the feasibility of simultaneous anaerobic methane and ammonium removal in a granular sludge reactor, *IWA EcoSTP conference*, Verona, Italy, 05/2014
9. **Winkler M-K.H.#**, Bennenbroek M.H., Horstink F.H., van Loosdrecht M.C.M, van de Pol G-J., 2013, The biodrying concept: An Innovative Technology creating energy from sewage sludge, *IWA Leading Edge Technology (LET) Conference*, Abu Dhabi, United Emirates, 05/2014

10. **Winkler M-K.H.#**, Kleerebezem R., and van Loosdrecht. M.C.M., Integration of anammox into the aerobic granular sludge process for mainstream wastewater treatment at ambient temperatures, *IWA-Biofilm Reactor conference*, Paris, France, 09/2013
11. **Winkler M-K.H.#**, Kleerebezem R., Kuenen J.G., Yang J., and M. and van Loosdrecht M.C.M., 2011, Segregation of biomass in cyclic anaerobic/aerobic granular sludge allows the enrichment of Anaerobic Ammonium Oxidizing Bacteria at low temperatures, *IWA Nutrient Recovery Conference*, Vancouver, Canada, 08/2013
12. **Winkler M-K.H.#**, Bassin J.P., Kleerebezem R., Sorokin D., and van Loosdrecht M.C.M., Unravelling the reasons for disproportion in the ratio of AOB and NOB in aerobic granular sludge, *IWA-MEWE Conference*, Ann Arbor, Michigan, USA, 06/2013
13. **Winkler M-K.H.#**, Bassin J.P., Kleerebezem R., van Loosdrecht M.C.M., van den Brand T.P.H., 2011, Selective sludge removal in a segregated aerobic granular biomass system as a strategy to control PAO-GAO competition at high temperature, *WEF/IWA Biofilm Reactor Technology Conference*, Portland, USA, 07/2010

Poster presentations

1. Stephany P^{#1}, Wei, Brian Roman¹, Karisse Chandra Yamamoto^{1*}, **Winkler M-K.H.**, A Proof-of-Concept for Nutrient Recovery from Aquaculture Waste using Aerobic Granular Sludge, LET 2022, Reno Nevada
2. Dongyu Wang, Zach Flinkstrom, Pieter Candry, Bruce Godfrey, Britt Abrahamson, Juliet Johnston, Sam Bryson, Ludmila Chistoserdova, David Stahl, Chongle Pan, Xavier Mayali, and **Winkler M-K.H.**, Experimental models bridging single cell-to-ecosystem scales to evaluate climate-wetland feedback mechanisms, DOE-PI conference, 2/2022
3. Juliet Johnston, Britt Abrahamson, Zach Flinkstrom, Stephany Wei, Xiangpeng Li, Hanyan Li, Michael Wells, Long Ngo, Eunhyung Choi, Xianhui Wan, Xin Sun, David Stahl, Peter K. Weber, Xavier Mayali, Chongle Pan, Wei Qin, Willm Martens-Habbena, Bess B. Ward, **Winkler M-K.H.**, N₂O Formation and Organic Nitrogen Utilization in Wetland Microbial Communities, DOE-PI conference, 2/2022
4. Candry P.^{#3}, Stahl D.A., Chistoserdova L., Pan. C., Mayali X. **Winkler M-K.H.**, *Bridging Scales: Conceptualizing Microbe-Climate Links in Wetland Ecosystems*, DOE-PI meeting, virtual due to the pandemic, 02/2021
5. Johnston J., Stahl D.A., Chistoserdova L., Pan. C., Mayali X. **Winkler M-K.H.**, *Hydrogel Beads to Encapsulate Sediment Microbes as a Strategy to Quantify Climate Impacts on Microscale Biogeochemical Activity*, DOE-PI meeting, virtual due to the pandemic, 02/2021
6. Pan. C., Stahl D.A., Chistoserdova L., Mayali X. **Winkler M-K.H.**, *Metabolic Modeling of Synthetic Estuarine Wetlands Microbial Communities in response to Climate Change*, DOE-PI meeting, virtual due to the pandemic, 02/2021
7. **Winkler M-K.H.#**, Stahl D.A., Chistoserdova L., Pan. C., Mayali X., *Integrating single-cell wetland microbiome structure, function, and activity to ecosystem-scale biogeochemical fluxes*, DOE-PI meeting, Washington DC, USA, 02/2020
8. **Winkler M-K.H.#**, Stahl D.A., Mueller A., Ismagilov R., *Implementation of a synthetic Anammox bio-granular technology in the main wastewater treatment line*, Brics DARPA conference, Charleston, USA, 04/2019
9. **Winkler M-K.H.#**, Stahl D.A., Mueller A., Ismagilov R., *Implementation of a synthetic Anammox bio-granular technology in the main wastewater treatment line*, Brics DARPA conference, Santa Barbara, USA, 04/2018
10. **Winkler M-K.H.#**, Stahl D.A., Mueller A., Ismagilov R., *Implementation of a synthetic Anammox bio-granular technology in the main wastewater treatment line*, Brics DARPA conference, Austin, USA, 04/2017

11. Figdore, B.A.¹, Stensel, H.D., **Winkler M-K.H.**, Neethling, J.B., *Aerobic Granular Sludge for Biological Nutrient Removal*. Water Environment Federation/International Water Association Nutrients Conference, Denver, Colorado, USA, 08/2016
12. **Winkler M-K.H.**[#], Ettwig K.F., Vannecke T.P.W., Stultiens K., Bogdan A., Kartal B. Volcke, E.P.I, ICoN2, *Modelling simultaneous methane and ammonium removal in a one-stage aerobic granular sludge reactor*, Edmonton, Canada, 04/2016
13. **Winkler M-K.H.**[#], Ettwig K.F., Vannecke T.P.W., Stultiens K., Bogdan A., Kartal B. Volcke, E.P.I, IWA Wastewater Modelling Conference 2014, *Modelling simultaneous methane and ammonium removal in aerobic granular sludge*, Spa, Belgium, 06/2014
14. **Winkler M-K.H.**[#], Kleerebezem R., Kuenen J.G., Yang J., and M. and van Loosdrecht M.C.M., *Segregation of biomass in cyclic anaerobic/aerobic granular sludge allows the enrichment of Anaerobic Ammonium Oxidizing Bacteria at low temperatures*, Leading Edge Technology Conference, The Netherlands, 07/2011

Conference participation (without oral or poster presentation)

1. IR² conference at Manhattan College, NYC, USA, 08/2015
2. B-IWA-conference, Aarteseelaar, Belgium, 02/2013
3. AEESP conference, Denver, USA, 06/2013
4. Wetsus Internal Congress, Leeuwarden, The Netherlands, 04/2012
5. AEESP conference, Tampa, USA, 06/2011
6. IWA-Membrane conference, Aachen, Germany, 06/2006

Professional society memberships.

International Water Association, 2015-ongoing
Associated of Engineering and Environmental Professors, 2014-ongoing
Water Environment Federation, 2015-ongoing

Other (Reviewer work)

Water Science & Technology, Biotechnology & Bioengineering, Environmental Science & Technology, Nature – Scientific reports, Water Research, Waste Management, Environmental Microbiology, Desalination, Applied Microbiology & Biotechnology, Current Opinion in Biotechnology, New Biotechnology

GRADUATE STUDENTS

Superscript Legend: ¹Student at UW, ^{1‡}Student oversees, * author on peer-reviewed publication, + author on conference presentation.

Chaired doctoral degrees at UW and at *external* universities, and obtained awards**

Student name	Chair or Co-Chair	Dissertation title	Graduation date	Current Employer
<u>Rubaba Mohammadi</u>	Co-Chair	TBD, Lappeenranta-Lahti University of Technology, Finland ** Valle Scholarship	2023	UW
<i>Livia Britschgi</i>	Co-Chair	Life Cycle of Aerobic Granular Sludge: The Key Role of Granule Disintegration, ETH Zurich, Switzerland	TBD	ETH Zurich
<i>Juho Kaljunen</i>	Co-Chair	Waste nutrients harvested: Design and evaluation of nitrogen and phosphorus	2023	Aalto U

		recovery processes utilizing membrane contactor and adsorption techniques, Aalto University Finland		
<u>Bao Nguyen Quoc</u> ^{1*+}	Chair	Effect of Granular Sizes on Nutrient Removal and Recovery in wastewater treatment processes **coMotion Postdoctoral fellowship[2023	UW
<u>Stephany Wei</u> ^{1*+}	Chair	Applications of Aerobic Granular Sludge and Source-Separated Urine for Enhanced Nutrient Removal and Recovery **EPA student competition and AEESP thesis award	2022	ETH Zürich
<i>Pamela Ceron Chafra</i> ^{1‡}	Co-Chair	Steering Product Formation in High-Pressure Anaerobic The role of elevated partial pressure of carbon dioxide (pCO ₂), TU Delft The Netherlands	2022	TU Delft
<u>Kathryn Cogert</u> ^{1*+}	Chair	Pairing Anaerobic Ammonia Oxidation with Newly Discovered Nitrite-Supplying Metabolisms for Enhanced Mainstream Nitrogen Removal. **EPA fellowship	2020	Amgen
<i>Mingsheng Jia</i> ^{1‡ *+}	Co-Chair	Nitrogen conversions in wastewater treatment: from microbial interactions to process evaluations, Ghent University, Belgium	2019	Ghent University
<u>Bryce Figdore</u> ^{1*+}	Co-Chair	Nitrification bioaugmentation in mainstream flocculent activated sludge systems using sidestream aerobic granular sludge	2017	HDR

Doctoral Students, and obtained awards**

Student name	Chair Co-Chair, daily supervisor, location	Status
Pei-Hsin Wang ¹	Chair, University of Washington, USA ** Liao Fellowship	To be determined
Brian Roman ¹	Chair, University of Washington, USA	To be determined
Britt Abrahamson ¹	Chair, University of Washington, USA	To be determined
Zachary Flinkstrom ¹	Chair, University of Washington, USA	To be determined

Chaired Master's Thesis Degrees (fully funded)

Student name	Chair or Co-Chair	Dissertation title	Graduation date	Current Employer
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Kim Tran ¹	Chair	Comparison of Sodium and Magnesium Cation-Induced Bioflocculation Mechanisms for Brightwater Treatment Plant	Summer 2023	UW
Mara Rotelulik ¹	Chair	Mitigate membrane fouling at Brightwater Treatment Plant by using Bioflocculation	Spring 2022	Consulting company, Kubota
Shannon Cavanaugh ¹	Chair	N ₂ O emissions in wastewater treatment	Summer 2021	Consulting company, Brown and Cardwell
John Carter ¹	Chair	Bioaugmentation with Sidestream Granular Sludge for Nitrification in Activated Sludge Wastewater Treatment: Pilot-Scale Investigation	Summer 2020	King County
Maxwell Armenta ¹⁺	Co-Chair	Operation and Performance of Pilot-Scale Sidestream Aerobic Granular Sludge Reactor for Nitrification Bioaugmentation	Spring 2019	Consulting company, HDR
Dan Kota Nishiguchi ^{1*+}	Chair	Correlating Sludge Constituents with Digester Foaming Risk Using Sludge Foam Potential and Rheology	Summer 2019	King County
Aparna Garg ^{1*+}	Chair	The effect of different sludge pretreatment methods on mitigation of anaerobic digester foaming	Summer 2018	Consulting company HDR

Other significant supervision (at University of Washington)

Postdoctoral researchers, and obtained awards**

Name	Supervisory role	Current employer
Bao Nguyen Quoc **CoMotion Postdoctoral fellowship	Main supervisor	CEE-UW
Korena Mafune **Postdoctoral fellowship Washington Research Foundation	Main supervisor	CEE-UW
Bo Li	Main supervisor	CEE-UW
Prakit Saingam	Main supervisor	CEE-UW
Wei Qin	Main supervisor	Professor at University of Oklahoma, USA
Ekatarina Gottshall ^{*+}	Main supervisor	Stay home mother
Raymond RedCorn	Main supervisor	US Congress
Pieter Candry	Main supervisor	Professor at University of Wageningen, The Netherlands
Levi Straka ^{*+}	Main supervisor	Chicago metropolitan water district
Kristopher Hunt	Main supervisor	CEE-UW

Matthieu Landreau ^{*+}	Main supervisor	Postdoc at Children's Hospital
Samuel Bryson **Postdoctoral fellowship Washington Research Foundation	Main supervisor	Phase Genomics
Lei Zhang ^{*+}	Main supervisor	Faculty position in China

RESEARCH ACTIVITIES

Funded Research (Total amount: \$15,197,000; Winkler's amount: \$12,396,000)

Funding Agency	Title	Role	Amount	Dates
UW Program on CC	Carbon capture from soil systems	PI	\$30K	8/23 – 8/24
Amazon	A novel bioreactor platform for continuous high-rate bio-production	PI	\$150k	3/23 – 3/24
USDA	Harnessing bacterial-fungal interactions for ag-tech (approved by program manager)	PI (coPI OU, Filley, Zhang)	\$850k my amount \$750k	09/23 – 9/26
King County	NA	PI	\$585k	10/22– 9/25
UW	Computing in the environment	coPI PI: Sheng Wang	\$60k my amount \$20k	06/22 – 12/23
NSF SBRI	Production of natural renewable gas from direct air capture	UW PI Industrial partner (Air2X)	\$250k my amount \$73k	05/22 – 04/23
UW coMotion GAP fund	Algae in hydrogels	PI	\$50k	09/22 – 08/23
NIH	Therapeutic bubble tea to enhance kidney disease	PI	\$2.8M	09/21 – 08/26
Water Reuse Foundation	Anammox in the mainline	PI	\$130k	7/2021– 6/2022
AXA (French insurance company)	Location specific detection of SARS-COV2 in a community using wastewater	PI	\$380k	07/2020 – 06/2022
Joint Genome Institute	Integrating single-cell wetland microbiome structure, function, and activity to ecosystem-scale biogeochemical fluxes	PI	Sequencing in value of ca. \$75k, user proposal	07/2020 – 06/2025
Centre for Dialysis Innovation	Therapeutic bubble tea for uremic toxin removal	PI	\$290k my amount \$145k	07/2020 – 06/2021
King County	NA	PI	\$525k	9/2022 – 8/2024
Centre for Dialysis Innovation	Therapeutic bubble tea to enhance	PI (coPI Yager)	140K (my amount 50K)	06/21– 08/22

Centre for Dialysis Innovation	Bubble tea project	PI	\$20k	12/19 – 06/20
King County	No running title	PI	\$525k	9/2019 – 8/2022
Department of Energy	Integrating single-cell wetland microbiome structure, function, and activity to ecosystem-scale biogeochemical fluxes	PI (co-PI: Stahl, Chistoserdova, Mayali, Pan)	\$3.3M, my amount: \$2.5M	09/19 – 03/22
Defense Advanced Research Projects Agency	Small scale low energy water recycle from urine and sweat in desert areas	PI (co-PI Stahl)	\$1M, my amount: \$910k	12/2019 – 1/2020
Aecom (consulting firm)	San Luis Demonstration Treatment Plant - formation of granular biomass	PI	\$10k	8/18 – 07/19
Mistletoe Foundation	No running title	PI	\$10k	09/2018 – 08/2019
Microsoft	AI for Earth: Pioneering the Integration of Microbial System Models and Microbial Community Analysis to Advance Wastewater Treatment Technology	PI	Computing time worth \$5K	9/18 – 8/19
EPA	Online Sensor for Wastewater Phosphorus Recovery (phase I)	PI	\$20k	6/17 – 5/19
Defense Advanced Research Projects Agency	Implementation of a synthetic Anammox bio-granular technology in the main wastewater treatment line	PI (co-PI, Mueller, Stahl, Ismagilov)	Total amount \$2.7M, my amount \$1.9M	8/17 – 7/19
Water Environment & Reuse Foundation	Paul Busch Award	PI	\$100k	10/2015-10/2017
King County	King County Graduate Research Program	PI (coPI Stensel)	Total amount \$509k my amount \$254k	9/2016 – 9/2019
NSF-WEF	NSF 2016 Title: GOALI: Bioaugmentation of activated sludge with high activity nitrifying granules/flocs: population	PI	\$330k	4/2017 – 3/2020

	selection, survival, biokinetics			
NSF	UNS 2015 Selection of Granules in Activated Sludge for Nutrient Removal and Phosphorus Recovery	CoPI (PI, Stensel)	Total amount \$330k my amount \$165k	9/2015 – 8/2018

Pending / submitted Proposals

Funding Agency	Title	Role	Amount	Dates
NSF	Intensifying wastewater treatment and enabling phosphate recovery with quantum biology, omics technologies, and machine learning	PI (partners Imperial college UK, Northeast, US)	1M my amount ~ 300K Positive evaluation of abstract and full proposal under review.	09/2023 – 09/2026
ArpaH	Therapeutic Bubble Tea – a Gut based replacement for Dialysis	PI (coPI: Ginkgo, Harvard, UW Medicine, Berkeley, Fortrea, Captive BioSolutions)	~100M, My amount ~20M UW amount ~40M, Positive evaluation of abstract and full proposal in prep.	02/2024 – 01/2029
DARPA	Investigating the power of encapsulated bacterial-fungal interactions to enhance bioremediation of TNT	PI	3.2M Positive evaluation of abstract and waiting for a call to submit full.	unknown

DOCUMENTATION OF TEACHING EFFECTIVENESS

Courses Taught & Student Evaluations

Course	Title	Quarter	Credit	Enrollment	Response	Item 1	Item 3	Item 4	Average
CEWA 352	Introduction to Environ Microbiol.	Fall 2022	5	24	13	4.0	4.1	4.1	4.1
CEWA 540	Microbiol. process Fundament.	Fall 2022	5	40	9	3.4	4.3	4.3	4.1
CEWA 352 (COVID)	Introduction to Environ Microbiol.	Fall 2021	5	19	14	3.6	4.4	4.2	4.2

CEWA 540 (COVID)	Microbiol. process Fundament.	Fall 2021	5	49	14	3.3	3.8	3.8	3.6
CEWA482 (COVID)	Water Reuse & Resource Recovery	Winter 2020	3	37	46%	3.9	4.4	4.4	4.1
CEWA 352 (COVID)	Introduction to Environ Microbiol.	Fall 2020	5	13	52%	4.5	4.6	4.6	4.6
CEWA 540 (COVID)	Microbiol. process Fundament.	Fall 2020	5	24	35%	3.7	3.5	3.5	3.6
CEWA 352	Introduction to Environ Microbiol.	Fall 2019	5	19	100%	4.4	4.4	4.3	4.4
CEWA 540	Microbiol. process Fundament.	Fall 2019	5	62	74%	3.7	3.3	3.4	3.9
CEWA582	Water Reuse & Resource Recovery	Winter 2019	3	14	100%	3.6	3.9	3.6	3.7
CEWA482	Water Reuse & Resource Recovery	Winter 2019	3	25	76%	3.7	3.3	3.6	3.6
CEWA352	Introduction to Environ Microbiol	Fall 2018	5	25	88%	3.6	4.7	4.1	4.0
CEWA482	Water Reuse & Resource Recovery	Winter, 2018	3	37	62%	3.7	3.4	3.1	3.4
CEWA352	Introduction to Environ Microbiol	Fall 2017	5	16	94%	2.7	3.4	2.7	2.9
CEWA482	Water Reuse & Resource Recovery	Winter, 2017	3	19	66%	3.2	3.2	3.0	3.2
CEWA541	Biol. Wastewater treatment	Winter, 2017	3	16	87%	2.2	2.7	1.7	2.4
CEWA482	Water Reuse & Resource Recovery	Spring, 2016	3	2	100%	4.0	3.5	3	3.7
CEWA541	Biol. Wastewater treatment	Winter, 2016	3	28	96%	2.5	3.2	2.7	2.8

Teaching release / Maternity Leave / Buyouts
Winter 2015, Fall 2016, Winter 2021 - 2023

Peer Teaching Evaluations

Course	Quarter	Reviewer
CEWA352	Autumn 2022	Roger E. Bumgarner
CEWA352	Autumn 2021	John Mittler
CEWA352	Autumn 2020	Jeffrey Berman
CEWA540	Autumn 2019	Rebecca Neumann
CEWA352	Autumn 2018	Jessica Lundquist
CEWA541	Winter 2017	Jeffrey Berman
CEWA352	Fall 2017	Jeffrey Berman
CEWA541	Winter 2016	Jeffrey Berman

Supervision of independent study (at University of Washington), **fellowships

Student Name	Degree	Quarter	Description
Rosemary Randall	Bsc	Summer 2023 – Fall 2024	Innovating Biofertilizer ** CoMotion internship project
Julia Fudge	Bsc	Spring 2022 - Spring 2023	Therapeutic Bubble Tea **NIH fellowship (diversity funding)
Anders Trevis	BSc	Winter 2023	Hydrogels as synthetic soil aggregates
Mai Abualsud	BSc	Winter 2023	Development of a synthetic community producing medium-chain carboxylic acids
Tanay Doctor	BSc	Fall 2021-Spring 2022	Nuvoda Mobile Organic Biofilm
Nate Cusack	BSc	Fall 2021	Enrichment of chain elongators from wetlands
Lillian Crossley	BSc	Winter & Summer 2021	Urolytic activity of an NOB species & Wetland community enrichments in PFR
Karisse A Yamamoto	BSc	Winter & Spring 2021	P Recovery with Aerobic Granular Sludge. **Mary Gates Research Scholar
Presley Sweeney	BSc	Spring 2020	Tailoring polyvinyl alcohol-sodium alginate hydrogels
Alyssa Vacheron	BSc	Spring 2020	Kinetics of nitrifying organisms
Yinghan Li	MSc	Spring 2020	Lignin-degrading pathways
Angana Deb	BSc	Spring & Summer 2020	Medical device development
Joyce Lu	BSc	Spring & Summer 2020	Medical device development
Tania To	BSc	Spring & Summer 2020	Medical device development
Jacob Lamb	BSc	Winter & Spring 2020	Modeling Oxygen Supply for Bioreactors
Nicholas Tan	BSc	Winter & Spring 2020	Anaerobic bacteria culturing
Kim Tran	BSc	Spring 2017 - Spring 2020	Various Reactor Operations
Annie Dubner	BSc	2017-2020	Aerobic granular sludge mainstream
Kristina Nguyen	BSc	Winter - Summer 2019	Cell immobilization with hydrogel beads
Adityar Lyer	BSc	Fall 2019	Analyze PHA by HPLC system

Lyddie Austin	BSc	Fall 2019	Pink berries reactor
Frances Parson	BSc	Spring 2019	NDAMO reactor
Yangyang Liu	BSc	Fall 18, Winter & Spring 19	Pink berries, Bioinformatics
Ashley Han	BSc	Fall 18, Winter & Spring 19	Milifluidic hydrogel droplet production
HeeJun You	BSc	Spring & Summer 2018	Cell immobilization with hydrogel beads
Serena Lee	MSc	Summer & Fall 2018	Aerobic granular sludge reactor
Stephanie Herrera	BSc	Summer 2017 - Spring 2018	Combining flocs and granules
Anika Parker	BSc	Spring- Fall 2018	Molecular biology of hydrogel beads
Nathan Nguyen	BSc	Fall and Winter 2018	Selenium removal
Nooah Bennett	BSc	Fall and Winter 2018	Ammonia oxidation in granular sizes
Siddharth Dayal	BSc	Fall and Winter 2018	Cultivation of pink berries
Lu Zhao	MSc	Spring - Fall 2018	Ndamo reactor
Zander Nevitt	MSc	Spring - Fall 2018	Biosensors
Kateryna Gomozsova	BSc	Fall 2016 - Summer 2017	Anammox Reactor Operation and Evaluation
Carter Gears	BSc	Winter 2016 & Spring 2017	Ammonium Oxidizing Archaea
Richard Parra	BSc	Fall 16, Winter-Spring 17	Aerobic Granular Sludge Operations
Aparna Garg	MSc	Summer 2016	Aerobic granular sludge reactor
Jianfeng Zhou	MSc	Winter 2016	Aerobic granular sludge reactor
Maria Abando	BSc	Fall - Winter 2015	Alginate Based Synthetic Granule

International collaborations

Doctoral students (supervision at University of Washington)

Student name	Chair Co-Chair, daily supervisor, location	Status / graduation
Alia Nasir ^{1‡}	Co-Chair, Washington State University, USA	To be determined
Bojan Pelianoski ^{1‡*+}	Daily supervisor, University of Duisburg Essen, Germany	Consulting, wte, Germany
Victor Lobanov ^{1‡}	Daily supervisor, Goteborg University, Sweden	To be determined
Ting Xie ^{1‡*+}	Daily supervisor, Hunan University, China	Faculty position in China
Celia Castro ^{1‡*+}	Daily supervisor, Ghent University, Belgium	Consulting, Suez, Spain

Visiting Master students (at University of Washington)

Student Name	Quarter	Home institution	Description
Yujin Kim	Spring 2022 - Summer 2022	KAIST, South Korea	PHB-accumulating methanotrophs from wetlands
Lukas Keller ^{1‡}	Winter 2019 - Summer 2020	ETH Zurich, Switzerland	Combination Comammox and Anammox
Kumari Soni ^{1‡}	Spring 2016 - Fall 2017	University of Duisburg Essen, Germany	NDAMO & Anammox Co-operation

Laura Orschler ^{1‡}	Spring 2016 - Fall 2017	University of Duisburg Essen, Germany	AOA & Anammox Co-operation
Xichen Gao ^{1‡}	Fall 16, Winter-Spring 17	University of Duisburg Essen, Germany	Aerobic Granular Sludge Operations
Bao Nguyen Quoc ^{1‡}	Winter - Fall 2016	University of Duisburg Essen, Germany	Combining AOA with dPAO in Aerobic Granular Sludge

Visiting Professors (at the University of Washington)

Name	Home institution	Date of completion
Chang-Ping Yu	National Taiwan University	ongoing
Jun Yin	Zhejiang Gongshang University, China	12/2019
Ruilong Bao	Hohai University, China	08/2016

Master students (prior to coming to the University of Washington)

Student name	Supervisory role	Date of completion
Thomas Vannecke	Daily supervisor	12/2014
Le Hong Quan ^{*+}	Daily supervisor	06/2014
Ho Tuan Long ^{*+}	Daily supervisor	06/2014
Birk Hahne ^{*+}	Daily supervisor	04/2014
Aleksandra Bogdan ^{*+}	Daily supervisor	12/2013
Nienke Bruinsma	Daily supervisor	06/2011
Jonathan Habermacher ^{*+}	Daily supervisor	06/2010
Styliani Chourdaki	Daily supervisor	06/2010
Jingjing Yang ^{*+}	Daily supervisor	09/2009
Tessa van den Brandt ^{*+}	Daily supervisor	08/2009

Undergraduate students (prior to coming to the University of Washington)

Student name	Supervisory role	Date of completion
Birk Hahne ^{*+}	Daily supervisor	04/2012
Renco Beunis	Daily supervisor	02/2011
Staphanie Mesker	Daily supervisor	04/2011
Mark van der Braak	Daily supervisor	02/2009
Eileen Muhs ^{*+}	Daily supervisor	07/2006
Kent Hoe	Daily supervisor	07/2006

List of other teaching contributions

- *Webinars, Seminars, and Workshops by Dr. Winkler are listed under “Professional Society and other Service” section.*
- *Seminars of external speakers that Dr. Winkler organized for students of the CEE department are listed under “Departmental and College Service” section.*

Teaching and organizational activities outside UW

1. Environmental engineering teaching assistant, Columbia University, 2012, NYC, USA
2. Microbiology lab assistant, 2011, Technical University Delft, The Netherlands
3. Organizing weekly lectures, 2008-2011, Technical University Delft, The Netherlands

4. Advanced biotechnology teaching assistant, 2010, The Netherlands
5. Geo-microbiology lab assistant, 2005, Biofilm Centre, Duisburg, Germany
6. Bioconversion lab assistant, 2008-2010, TUD, The Netherlands

SERVICE

Departmental and College Service

Single Lectures (by Dr. Winkler)

1. *CEE444 Capstone Presentation*, 2023
2. Lecture to the Dean of Engineering Nancy Allbritton, *title: Research at Ben Hall labs*, 2020
3. *CEE102, Introduction to Civil and Environmental Engineering*, 2020
4. Civil and Environmental Water Seminar, *title: From waste to resources: Recovery of biofuels, bioplastic, fertilizer and energy*, 2020
5. Lecture for Norway exchange program, *title: Aerobic granular sludge*, 2018
6. *CEE 500 B/E Environmental / Water Resource seminar*, 2016
7. *CEE 100 Freshman Seminar Series*, 2016

Single lectures by invited speakers (organized by Dr. Winkler)

1. Speaker: Reinhard Huebner, Skion GmbH, Germany, *title: New trends in the water sector: A perspective from an Investment Manager*, 2019
2. Speaker: Cristian Picioreanu, TUD, the Netherlands, *title: Modelling biofilms*, 2019
3. Speaker: Korneel Rabaey, Ghent University, Belgium, *title: Resource recovery in wastewater*, 2017

Committees

1. Lead of faculty mentoring committees for Erika Fuhrmeister
2. CEE undergraduate advising committee 2023
3. Justice Equity Diversity and Inclusion (JEDI) committee 2022
4. Justice Equity Diversity and Inclusion (JEDI) 2021
5. CEE Ad Hoc Committee on Faculty Performance Expectations, 2021
6. CEE Ad Hoc Committee on Faculty Performance Expectations, 2020
7. CEE Diversity, Equity, Inclusion, & Climate Committee, 2020
8. CEE Diversity, Equity, Inclusion, & Climate Committee, 2019
9. CEE Graduate Education Committee, 2018
10. CEE Graduate Education Committee, 2017
11. CEE Graduate Education Committee, 2016
12. Steering committee for faculty hire (Jessica Ray) in CEE-UW, 2018
13. Steering committee for faculty hire (unsuccessful search), CEE-UW, 2017
14. Graduate Education Committee, CEE department, University of Washington, 2017
15. Graduate Education Committee, CEE department, University of Washington, 2016
16. Steering committee for faculty hire (Nirnimesh Kumar), CEE-UW, 2016
17. Faculty mentoring committees for Nirnimesh Kumar
18. Faculty mentoring committees for Jim Thomson
19. Teaching evaluation for Nirnimesh Kumar
20. Evaluating undergrad scholarship recipients for UW CEE students, 2016

College service

1. Organized a workshop in 2017 for faculty from the College of Engineering to facilitate interdisciplinary research across departments.

University Service

1. Diversity, Equity, and Inclusion in research, Lead by Mari Ostendorf.
2. Presentation about urine treatment to Councilmember Lambert, facilitated by Aslly J. Clark from UW.
3. Advise Rep. Mary Dye (WA legislature 9th district) about nitrogen removal from waste water. Requested by Nancy Allbritton, Dean of College of Engineering.

Professional society and other service

International and national governmental reviewer service

1. Editor at the journal Water Research since 2021, Review of ~500 papers a year
2. WEFTEC Conference, Review of 80 abstracts, 2023
3. WEFTEC Conference, Review of 50 abstracts, 2022
4. IWA Ressource Recovery Conference, Review of 5 abstract, 2021
5. WEFTEC Conference, Review of 50 abstracts, 2021
6. NSF C-BET review panel, 2-day long review panel, review of 7 proposals, 2020
7. WEFTEC Conference, Review of 150 abstracts, 2020
8. LET-Conference, Review of 80 abstracts, 2019
9. NSF C-BET review panel, 2-day long review panel, review of 6 proposals, 2019
10. WEFTEC conference, Review of 150 abstracts, 2019
11. Review proposal for the University of Washington Royalty Research fund, 2019
12. Department of Defense review panel for Multidisciplinary University Initiative call, 2018
13. Proposal review FWO-Belgium, 2018
14. Department of Defense Review panel, 2018
15. WEFTEC Conference, Review of 90 abstracts, 2018
16. WE&RF Project Advisory Committee (PAC), 2017
17. ASM Microbe 2017, New Orleans USA Review of 70 abstracts, 2017
18. WE&RF Review, Evaluation of 3 companies / technologies, 2017
19. WEFTEC Conference, Review of 80 abstracts, 2017
20. WEFTEC Conference, Review of 150 abstracts, 2016
21. IWA Residuals and Biosolids Conference, Review of 70 abstracts, 2015
22. Committee to elect winner of the IWA- Specialist Medal in Residuals Research, 2015

Chairing activities

1. Session cochair, ASM, Houston Texas, USA, 2023
2. Session cochair, Leading Edge Technology Conference, Nevada Reno, USA, 2022
3. Chair, Discussion on biosolids, WEFTEC conference, Chicago, USA, 2021
4. Conference steering committee, IWA Ressource Recovery Conference Istanbul, Turkey, 2021
5. Co-chair, Nutrient removal session, IWA LET-Conference, Edinburgh, UK, 2019
6. Chair, Modelling workshop, WEFTEC conference, New Orleans, USA, 2018
7. Chair, Aerobic granular sludge session, WEFTEC, Chicago, USA, 2017
8. Chair, microbiology session, ASM Microbe, New Orleans, USA, 2017
9. Co-Chair at one session at the AEESP Research and Education Conference 2017
10. Chair, Workshop, WEFTEC conference, New Orleans USA, 2016
11. Co-chair, granular sludge session, IWA LET-Conference, Hongkong, China, 2015
12. Co-chair, granular sludge session, IWA Leading Edge Technology (LET) Conference, Abu Dhabi, United Emirates, 2014
13. Conference steering committee, IWA Leading Edge Technology (LET) Conference, Abu Dhabi, United Emirates, 2014
14. Co-chair, nitrogen session, Nutrient Recovery Conference, Vancouver, Canada, 2013

15. Chair, Nitrogen removal in industrial applications, ICoN3, Tokyo, Japan, 2013
16. Chair, Granular sludge session, Biofilm Reactor conference, Paris, France, 2013

Other international, national, or governmental service

1. Co-Editing (with George Wells as lead) the Environmental Biotechnology 2024 issue of *Current Opinion in Biotechnology* (COBIOT)
2. Editorial board of *Water Research* 2021- ongoing
3. Editorial board to the *Journal of Clean Water*, nature publishing group, 2018-2021
4. Editorial board to the *Journal of Frontiers in Microbiology*, 2018-2019
5. Aerobic granular sludge steering committee of Aqua aerobics, 2016-current
6. Mendeley Research ambassador (write critical abstracts about publications), 2016-2018
7. Newsletter editor IWA expert panel on the sludge management, 2013-2018