Nynke Hofstra

Academic position

2019-present	Associate professor (0.8 fte), Water Systems and Global Change Group, Wageningen University
2008-2019	Assistant professor (0.8 fte), Environmental Systems Analysis Group, Wageningen University

Research experience

- Main focus: apply environmental systems analysis approaches to the field of water quality and health.
- My team: 4 graduated and 7 ongoing PhD students and a postdoc.
- Model initiation and development: Global Waterborne Pathogen (GloWPa) model that simulates pathogen, including Anti-Microbial Resistance (AMR), concentrations in surface water worldwide.
- Application: GloWPa model globally and locally across the world.
- Tool development: with and for stakeholders to help understand and create development pathways for microbial water quality, health risk and changes due to socio-economic development, climate change and interventions.
- Leading role in the World Water Quality Alliance: chair of the Technical Advisory Committee and uniting the large-scale water quality modellers through initiating meetings and joint papers.
- Role in the Health Related Water Microbiology specialist group of the International Water Association: co-organiser of the bi-annual Watermicro conference planned in Amersfoort in June 2025.

Teaching experience

- Education coordination WSG: As education coordinator (since 2021), I lead the involvement of staff members in courses, keep an eye on the finances and am part of the management team of the group.
- Course coordinator: I previously coordinated 5 different courses, and currently coordinate the Academic Consultancy Training course „Design of Climate Change Mitigation and Adaptation Strategies".
- Lecturer: I teach on microbiological water quality in 3 more courses.
- (Re)design of courses: I have enjoyed designing courses from scratch and redesigning several courses that were previously poorly evaluated.
- Supervision: around 8 MSc thesis and 8 internship students per year.
- Programme committee: I have been a member of the PC for BES/MES/MUE as a student, in 2009-2016 and from 2022-present.
- Evaluation: Courses that I coordinate (3.6-4.1 since 2019) and personal contribution (3.7-4.7) are usually well evaluated (on a scale of 1-5).
- University Teaching Qualification: obtained in 2011.

Education

2005-2009	PhD, Oxford University Centre for the Environment, Oxford, UK Title: "Development and evaluation of a European daily high-resolution gridded dataset of surface temperature and precipitation for 1950 - 2006", Daily supervisor: Dr. Mark New
2003-2005	MSc, Wageningen University, Wageningen, the Netherlands MSc. Environmental Sciences, cum laude (top 5%). Major: Environmental Systems Analysis, minor: Air Quality.
2000-2003	BSc, Wageningen University, Wageningen, the Netherlands BSc. Environmental Sciences.

Contact

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Values

- Optimism and balance provide me with energy and satisfaction
- Connecting in an open and respectful way with others
- Contributing to a better world and to a pleasant working environment
- Autonomy to make my own, and others their own, decisions

Research credits

- # of publications	57
- # of citations (scholar)	6329
- h index (scholar)	28
- PhD students graduated	4
- PhD students ongoing	7

Hobbies

- Volleyball
- Sewing
- Spending time with friends and family

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Scientific track record

- 2024-present Project "PreVir Towards an early-warning tool predicting enteric virus contamination of coastal watersheds", funded by Water4All (through NWO)
- 2023-present Project "WaterPath: a Future Scenario Toolkit for Waterborne Infectious Disease Modelling", a project funded by the Wellcome trust for which we will develop a toolkit to evaluate impacts of climate change, including extreme events, on microbiological water quality and health risk with stakeholders.
- 2023-present Co-organiser of the 22nd symposium on Health-related Water Microbiology (an International Water Association (IWA) specialist group) in June 2025 in Amersfoort.
- 2022-present Chair of the Technical Advisory Committee of the World Water Quality Alliance (WWQA) convened by UNEP.
- 2021-present PPS project "Voedselveiligheid in een circulair water- en voedselsysteem"
- 2020-2021 Organising two workshops funded by WWQA (June 2020 online from Wageningen and February 2021 in Leipzig) to facilitate development of global community water quality scenarios as input for the World Water Quality Assessment
- 2019-2020 Lead author of the chapter Impacts of Water Quality on Human Health in the Baseline World Water Quality Assessment published by UNEP and contribution author on several other chapters
- 2018-2021 Project "Knowledge-to-Practice - K2P: Mapping and Implementing Knowledge to Practice Utilizing the Global Water Pathogen Project (GWPP)" in which we developed tools that visualise microbial water quality maps and sanitation scenarios with stakeholders funded by the Bill and Melinda Gates Foundation (https://tools.waterpathogens.org/maps)
- 2017 Organise a workshop entitled "Water quality: a new challenge for global scale modelling" held in Wageningen 18-21 September 2017, funded by OECD-CRP.
- 2013 – present Guest-editor for:
  - Environmental Science: Water Research & Technology (ESWRT) for a special issue on Climate Change Adaptation in Water Quality & Treatment (2025)
  - Environment and Planning B: Urban Analytics and City Science for special issue on Accelerating Progress towards Universal Water Sanitation and Hygiene(WASH): Governance, Technology and Data for Urban Settings (2022)
  - Current Opinion in Environmental Sustainability for special issue on Global Water Quality Modelling (2019)
  - Journal of Environmental Quality for special issue on Microbial Water Quality (2018)
  - Food Research International for special issue on Climate Change and Food Safety (2014)
- 2011-2014 Work package leader for WP9 of the EU funded Veg-i-Trade project
- 2009-present Supervision of 11 PhD students, four have graduated, 7 are ongoing.
  - 2023-present Floris Teuling "Nitrogen cycling in soil and groundwater, local phenomena on a global scale"
  - 2022-present Miranti Ariyani "Antibiotics in a multifunctional reservoir: exploring its occurrence, sources, and impact on reservoir services"
  - 2021-present Songtao Mei "Modelling of antibiotics and antimicrobial resistant bacteria in rivers in China"
  - 2021-present Shiyang Li "Multi-pollutant assessment and solutions for clean water in Three Gorges Reservoir area in China"
  - 2019-present Abdullah al Masud "Environmental Sustainability of the Bangladeshi Shrimp Industry in the Context of Climate Change"
  - 2018-present Daniel Okaali "Rotavirus concentrations and associated disease burden in Uganda's rivers"
  - 2018-present Nancy Mondragon "Quantifying the impact of flooding on waterborne pathogens and their health risks in Mexico City"
  - 2013-2018 Lucie Vermeulen "Cryptosporidium in rivers of the world : the GloWPa-Crypto model"
  - 2013-2017 Majedul Islam "Assessing the impact of socio-economic development and climate change on faecal indicator bacteria in the Betna River, Bangladesh"
  - 2012-2017 Muhammad Shahid Iqbal "Quantifying the impact of socioeconomic development and climate change on *Escherichia coli* concentrations in the Pakistani Kabul River"
  - 2010-2015 Cheng Liu "Impact of climate change on microbial safety of leafy green vegetables"
- 2007-present Reviewer of a large number of scientific publications for different journals, including Nature journals, Water Research, Environmental Science and Technology and the Lancet, and of PhD proposals for WIMEK and review of grant proposals for the Open Technology Programme of NWO, Swedish Research Council and others.
- 2005 – 2009 PhD at the Centre for the Environment at Oxford University; worked in an international team on the observational temperature and precipitation dataset (E-OBS) for the EU-funded project ENSEMBLES.

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Leadership experience

- March 2024-present Interim chairholder WSG
- 2021-present Education coordinator WSG and member of WSG (now ESC) management team
- 2020 Course Personal Leadership Expedition
- 2017-present Leading role in the large-scale water quality modelling community
  - Initiating contact and uniting the community in 2017
  - Acquiring funds for organisation of workshops and postdoc to work for the community in 2017, 2020, 2021 and 2024
  - Special issue resulting from the 2017 workshop
  - Several other joint papers
  - Leading role in development of "World Water Quality Assessment: First Global Display of a Water Quality Baseline"
  - Involvement in the water quality sector of the Inter Sectoral Impact Model Intercomparison Project (ISIMIP)
  - Chair of the Technical Advisory Committee of the World Water Quality Alliance (WWQA)
- 2011-present Coordinating PhD supervision teams with different types of supervisors
- 2010-2012 Leeuwendaal courses as part of tenure track
- 2010-present Pioneering and leading my own interdisciplinary topic on large-scale microbiological water quality, health risks and global change impacts

Funding

2025	World Water Quality Alliance seed funding, €36,472
2024	PreVir: Towards an early-warning tool predicting enteric virus contamination of coastal watersheds. Water4All (NWO), €126,157
2023	WaterPath: a Future Scenario Toolkit for Waterborne Infectious Disease Modelling. Wellcome trust, €621,403
2021	Voedselveiligheid in een circulair water- en voedselsysteem. PPS, €82,800
2020	World Water Quality Alliance seed funding for organization of two workshops to organize scenarios, €48,014
2018	Knowledge-to-Practice - K2P: Mapping and Implementing Knowledge to Practice Utilizing the Global Water Pathogen Project (GWPP). Gates Foundation, €322,000
2017	OECD fund for organizing the first workshop: Water quality, a new challenge for global scale modelling
2011	EU FP7 project Veg-i-Trade, €250,000
2009-present	Funds for 11 PhD students, 4 graduated, 7 ongoing, including personal grants obtained by students themselves with my help, grants obtained by me for the PhD students and funds secured from the reserves of the chair group.

Multi- and interdisciplinary experience

- My work is by definition interdisciplinary. I combine microbiology, hydrology, and climate change disciplines and use data from many more fields, including sanitation, agriculture, waste water treatment technology, socio-economic development etcetera. Additionally, knowledge of stakeholder engagement and computer science is required to develop tools for stakeholders.
- To ensure that my work combines the expertise properly, I collaborate with disciplinary specialists, including
  - Microbiology: Prof. Gertjan Medema, KWR and TU Delft, Prof. Joan Rose, Michigan State University, Prof. Ana Maria de Roda Husman, National Institute for Public Health and the Environment (RIVM)
  - Antibiotics: Dr. Milou van der Schans, Wageningen Food Safety Research
  - Anti-microbial resistance: Prof. Heike Schmitt, National Institute for Public Health and the Environment (RIVM)
  - Hydrology: Dr. Michelle van Vliet, Utrecht University and Dr. Inge de Graaf, WSG
  - Stakeholder Engagement: Dr. Heather Murphy University of Guelph, Dr. Innocent Tumwebaze, African Population and Health Research Centre
  - Wastewater treatment: Dr. Matthew Verbyla, San Diego State University
  - Computer science: Panagis Katsivelis, Venthic Technologies

  And when I require expertise on other fields, I am able to find the experts and get them interested in my work.
- Many of my PhD students have one of these experts as (co-) promotors.

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International network

- Chair of the Technical Advisory Committee of the World Water Quality Alliance (WWQA) since 2022.
- My scientific articles have in total 124 different co-authors, 107 outside of WUR.
- Collaboration in international projects, such as WaterPath funded by the Wellcome trust, K2P funded by the Gates foundation, PreVir funded by Water4All (through NWO), and Veg-i-trade and ENSEMBLES funded by the EU.
- Contribution to several EU project proposals by several consortia.
- Connecting and uniting the large-scale water quality community, now organized under WWQA.
- Active contribution to the water quality sector in the Inter Sectoral Impact Model Intercomparison Project (ISIMIP) and participated in the COST Action PROCLIAS.
- Editor of 5 special issues in diverse international editorial boards.
- Regularly attendance of international conferences, including the bi-annual Watermicro conference of the Health-Related Water Microbiology specialist group of the International Water Association, the annual meetings of the European Geosciences Union and others.

Interaction with stakeholders

- I am to make my work relevant for stakeholders.
- I and my team develop tools with and for stakeholders in different projects:
  - K2P: together with stakeholder in Uganda, we have developed the Pathogen Flow and Mapping tool (https://tools.waterpathogens.org/maps) that enables stakeholders to understand sources of pathogens in their environment and the impact of interventions, such as sanitation changes and treatment improvements, on the pathogen emissions.
  - WaterPath: together with stakeholders in Uganda and Bangladesh we will develop a toolkit to help stakeholders evaluate impacts of socio-economic development and climate change, including extreme events, on microbiological water quality and health risk that will help them to understand how interventions influence the water quality and health risks and create development pathways.
  - Project "Voedselveiligheid in een circulair water- en voedselsysteem": together with stakeholder we will develop a tool that helps growers of fresh produce to decide on safe irrigation practices, with a particular focus on extreme climate events.
  - PreVir: together with stakeholders we will develop an early-warning tool that predicts the viral concentrations of the river, estuary and shellfish in relation to climate change.