Thorsten Wagener – Short Curriculum Vitae

Institute of Environmental Science and Geography, University of Potsdam, Germany
thorsten.wagener@uni-potsdam.de

Research Interests

Analysis and modeling of hydrologic systems – Global sensitivity analysis – Diagnostic evaluation of environmental models – Hydrologic predictions in ungauged basins – Hydrologic similarity and classification – Hydrologic services and hazards in a changing world – Hydro-epidemiology

Professional Preparation

2002 PhD Civil and Environmental Engr., Imperial College London/University of London, UK
1998 MS Civil Engineering and Geosciences, Delft University of Technology, NL
1995 BS Civil Engineering, University of Siegen, D

Appointments

2021 to date *Alexander von Humboldt Professor of Hydrologic Systems*
Institute of Environmental Science and Geography, University of Potsdam, D

2012-2020 *Professor of Water and Environmental Engineering*
Head, Water and Environmental Engineering Research Group
Academic Lead, Cabot Institute Water Research Theme
Department of Civil Engineering, University of Bristol, UK

2004-2012 *Associate (09-12) / Assistant (04-09) Professor*, Department of Civil and Environmental Engineering, Pennsylvania State University, USA

2002-2004 *Postdoctoral Research Associate/DAAD Research Fellow,* NSF Center SAHRA & Dep. of Hydrology and Water Resources, University of Arizona, USA

1998-2001 *Research Assistant*, Department of Civil Engineering, Imperial College London, UK

Honors and Awards

2021 Alexander von Humboldt Professorship, Alexander von Humboldt Foundation
2021 Honorary Academic Professor, University of Bristol
2020 Member of the European Academy of Sciences (www.eurasc.org)
2019 Fellow of the Institution of Civil Engineers (ICE)
2018 & 2019 Highly Cited Researcher/cross-field (Web of Science/clarivate.com)
2017 Royal Society Wolfson Research Merit Award
2017 Paul A. Witherspoon Lecturer, American Geophysical Union (AGU)
2017 Friedrich Willhelm Bessel Prize, Alexander von Humboldt Foundation
2014 Biennial Medal & Fellow, International Environmental Modeling & Software Society (IEMSS)
2011 Education and Public Service in Water Resources Award, UCOWR
2010 Walter L. Huber Engineering Research Prize, American Society of Civil Engineers (ASCE)
2010 Fellowship for Experienced Researchers, Alexander von Humboldt Foundation
2009 Science To Achieve Results (STAR) Early Career Award, US EPA
2009 & 2010 Best Paper Award, Environmental Modeling & Software Journal
2006 Early Career Research Excellence Prize, IEMSS
2002 Postdoctoral Fellowship, German Academic Exchange Service (DAAD)
2002 Unwin Prize, Dept. Civil and Environmental Engineering, Imperial College London
1999 Outstanding Student Paper Award, American Geophysical Union (AGU)

Selected Research Funding

2021-25 *Alexander von Humboldt Foundation* Professorship (PI) €3.5M
2020-21 *NERC* Blueprint for a Flood and Drought Res. Infrastructure [NE/V009060/1] (Co-I) £500k
2018-20 *NERC SHEAR* HYFLOOD [NE/S006079/1] (Co-I) £250k
2017-22 *Royal Society* Wolfson Research Merit Award [WM170042] (PI) £75K
2014-17 *NERC* MARIUS [NE/L010364/1] (Co-I) £3.5M
2014-22 *EPSRC* WISE Centre for Doctoral Training [EP/L016214/1] (Co-Director) £5.3M
2013-16 *ERC* FP7-ENV-2013 SWITCH-ON (Co-I) €6M
2012-16 *NERC* CREDIBLE [NE/J017450/1] (PI) £2M
2004-12 Funding in the USA >$7M as PI or Co-PI incl. *NSF, EPA, USDA, NOAA, DOE*

Selected Service

Conferences: Session convener at European Geosci. Union (EGU), American Geophysical Union (AGU) and Intern. Assoc. of Hydrol. Sci. (IAHS) **Assoc. Editor or Ed. Board**: (Current) Hydrological Processes, Water Resources Res., Water (Previous) J. Hydroinformatics, Env. Modeling & Software, Hydrol. and Earth Syst. Sci., Hydrol. Sci. J. **AGU Service:** (Current) Uncertainty Technical Committee Member (Previous) Com. chair Early Career Hydrol. Award; Horton Medal Com.; Horton Research Grants Com.; Ad Hoc Nominations Com. **IUGG Service:** (Current) Chair of the Capacity Building & Education Committee **IAHS Service:** (Previous) Chair hydrology education working group; Vice-President for Edu. and Capacity Build.; Member UNESCO/WMO/IAHS Selection Com. Intern. Hydrology Prize; PUB Sci. Steering Group; ICCLAS Secretary & Vice-Pres. **Other:** (Current) Member Helmholtz UFZ Sci. Advisory Com. (Previous) CUAHSI Edu. Outreach Adv. Board, Sci. Steering Com. MOPEX, Helmholtz Terrestrial Env. Progr. Site Visit, NASA ROSES Panel, Special NSF Hydrol. Panel Member

Open Source Software Packages Developed

Sensitivity Analysis For Everybody (SAFE) Open Source Software for Global Sensitivity Analysis. Freely available in Matlab, Python or R from www.safetoolbox.info with >3000 users worldwide so far.

PhD Student/Postdoc (PD) Supervision and co-Supervision

At Bristol: Georgios Sarailidis (current), Laura Devitt (c), Melike Kiraz (c), Charlie West (c), Elisa Bozzolan (c), Rosie Lane (2021), Ludovica Beltrame (2019), Barney Dobson (2018), Fanny Sarrazin (2018), Joost Iwema (2017), Jun Zhang (2017), Valentina Noacco (2017), Gemma Coxon (2015), Shima Beigi (2014) **PSU**: Riddhi Singh (2013), Christa Kelleher (2013), Keith Sawicz (2013), Kathryn van Werkhoven (2008) **Elsewhere:** A. Gunkel (2017), Y. Huang (2016), S. Almeida (2014), A. Hartmann (2013), S. Singh (2010), S. Yatheendradas (2007) **Current PD:** Robert Reinecke **Past PDs:** Valentina Noacco, Jude Musuuza, Fanny Sarrazin, Carolina Massmann, Susana Almeida, Lisa Hill, Chris Hutton, Francesca Pianosi, Toby Dunne, Ida Westerberg, Andreas Hartmann, Joshua Kollat, Martha Butler

Recent Consultancy Projects

2021 *Natural Environment Research Council (NERC)* – Rotator Scheme
2020 *World Health Organization (WHO)* – Drought and Health in the WHO European Region Review
2019 *UK Environment Agency* – Long-Term Investment Scenarios (LTIS) Review

Selected Publications (>130 papers), Web of Sci. (Publons) H-Index is 52 (*superv. student/PD)

Wagener, T. and Pianosi, F. 2019. What has Global Sensitivity Analysis ever done for us? *Earth-Science Reviews*, 194, 1-18. doi.org/10.1016/j.earscirev.2019.04.006

*Beltrame, L., Dunne, T., Rose Vineer, R., Walker, J.G., … & Wagener, T. 2018. A mechanistic hydro-epidemiological model of liver fluke risk. *Journal of the Royal Society Interface*, 15, 20180072.

*Hartmann, A., Gleeson, T., Wada & Wagener, T. 2017. Enhanced recharge rates by altered recharge sensitivity to climate variability through subsurface heterogeneity. *PNAS*, 114(11), 2842–2847

*Hutton, C., T. Wagener, J. Freer, D. Han, C. Duffy, & B. Arheimer 2016. Most computational hydrology is not reproducible, so is it really science? *Water Resour. Res.*, 52, 7548–7555.

*Pianosi, F. & Wagener, T. 2015. A simple and efficient method for global sensitivity analysis based on cumulative distribution functions. *Environmental Modelling & Software*, 67, 1-11.

*Pianosi, F., *Sarrazin, F. & Wagener, T. 2015. A Matlab Toolbox for Global Sensitivity Analysis. *Environmental Modelling & Software*, 70, 80-85. doi:10.1016/j.envsoft.2015.04.009

Wagener, T., Sivapalan, M., Troch, P.A., et al. 2010. The future of hydrology – An evolving science for a changing world. *Water Resources Research*, 46, W05301.

Gupta, H.V., Wagener, T. & Liu, Y. 2008. Reconciling theory with observations: Towards a diagnostic approach to model evaluation. *Hydrological Processes*, 22. doi: 10.1002/hyp.6989.

Wagener, T., Sivapalan, M., Troch, P. and Woods, R. 2007. Catchment classification and hydrologic similarity. *Geography Compass*, 1(4), 901, doi:10.1111/j.1749-8198.2007.00039.x

Wagener, T. et al. 2003. Towards reduced uncertainty in conceptual rainfall-runoff modelling: Dynamic identifiability analysis. *Hydrological Processes*, 17(2), 455-476.