Visiting Professor Charles S. Melching

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Academic Qualification:

Ph.D., Department of Civil Engineering, University of Illinois at Urbana-Champaign, 1987
M.S., Department of Civil Engineering, University of Illinois at Urbana-Champaign, 1983
B.S., Department of Civil Engineering, Arizona State University, 1981

Teaching Area

Undergraduate: Urban Hydrology and Stormwater Management, Applied Hydrology, Engineering Principles of Water Resources Design, Hydraulic Engineering, Introduction to Environmental Engineering
Post-Graduate: River Engineering, Water Quality Modeling and Management, Watershed Management, Probabilistic Approaches to Water Resources Engineering

Research Area

Water Quality Modeling and Management, Modeling Uncertainty Analysis, Surface Water Hydrology, River Hydraulics, Stormwater Management, Watershed Management,

Working Experience

2012-Present: President, Melching Water Solutions LLC, Environmental Engineering Consulting Company
2021-Present: Adjunct Professor, Department of Civil and Environmental Engineering, University of Wisconsin at Milwaukee
1999-2012: Associate Professor (1999-2009) and Professor (2009-2012), Department of Civil and Environmental Engineering, Marquette University, Milwaukee, WI
2005-2006: Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing
1992-1999: Hydraulic Engineer/Hydrologist, U.S. Geological Survey, Urbana, IL
1997-1998: Visiting Scholar, Laboratory of Hydrology, Vrije Universiteit, Brussel, Belgium
1989-1991: Assistant Professor, Department of Civil and Environmental Engineering, Rutgers University,
1987-1989: Visiting Lecturer, Laboratoy of Hydrology, Vrije Universiteit, Brussel, Belgium

Academic Publication（selected）

Melching, C.S., Wasik, J., Staudacher, E., and Minarik, T. 2023. Operational guidance for aeration and flow augmentation for the Chicago Area Waterway System—A case study, *Water Science and Engineering* , 16(4), 345-
Melching, C.S., 2018. Application of a water quality model to determine instream aeration station location and operational rules: A case study, *Water Science and Engineering* , 11(1), 8-17.
Liang, J., and Melching, C.S., 2015. Experimental evaluation of the effect of storm movement on peak discharge, *International Journal of Sediment Research* , 30(2), 167-177.
Melching, C.S., Liang, J., Fleer L.A., and Wethington, D.M. 2015. Modeling the water quality impacts of the separation of the Great Lakes and Mississippi River Basins for invasive species control, *Journal of Great Lakes*
Melching, C.S., Ao, Y., and Alp, E. 2013. Modeling evaluation of integrated strategies to meet proposed dissolved oxygen standards for the Chicago Waterway System, *Journal of Environmental Management* , 116(2013), 145-155.

Manache, G., and Melching, C.S. 2008. Identification of reliable regression- and correlation-based sensitivity measures for importance ranking of water-quality model parameters, *Environmental Modelling & Software* ,
Manache, G., and Melching, C.S. 2004. Sensitivity analysis of a water-quality model using Latin hypercube sampling, *Journal of Water Resources Planning and Management, ASCE* , 130(3), 232-242.
Melching, C.S., and Bauwens, W. 2001. Uncertainty in coupled nonpoint source and stream water-quality models, *Journal of Water Resources Planning and Management, ASCE* , 127(6), 403-413.
Melching, C.S., and Flores, H.E. 1999. Reaeration equations derived from USGS data base, *Journal of Environmental Engineering, ASCE* , 125(5), 407-414.
Melching, C.S., Yen, B.C., and Wenzel, H.G., Jr. 1990. A reliability estimation in modeling watershed runoff with uncertainties, *Water Resources Research* , 26(10), 2275-2286.

Books

Wang, Z.Y., Melching, C.S., Yi, Y., and Wang, R.Y., 2017. *Professional English—for Hydraulic Engineering* , Tsinghua University Press, Beijing.
Wang, Z.Y., Lee, J.H.W., and Melching, C.S., 2014. *River Dynamics and Integrated River Management* , Tsinghua University Press, Beijing, and Springer-Verlag, Berlin.
Tung, Y.K., Yen, B.C., and Melching, C.S., 2006. *Hydrosystems Engineering Reliability Assessment and Risk Analysis* , McGraw-Hill, New York, 495 p.
Melching, C.S. and Liu, C., eds., 2003. Special Issue on Sediment Transport and Environmental Studies, *International Journal of Sediment Research* , vol. 18, no. 2 *(Proceedings, U.S.—Chinese Joint Workshop on Sediment Transport and Environmental Studies, Milwaukee, WI, July 21-24, 2002)* .
Melching, C.S. and Pilon, P.J., eds., 1999. *Comprehensive Risk Assessment for Natural Hazards* , World Meteorological Organization Technical Document No. 955, 92 p.

Professional Certification and Awards

2015: Fellow, American Society of Civil Engineers (ASCE)
2012: ASCE Outstanding Reviewer, Journal of Environmental Engineering
2008: Marquette University, College of Engineering, Outstanding Researcher Award
2001: Walter L. Huber Civil Engineering Research Prize, ASCE—"For his research on uncertainty and reliability analysis in water resources and environmental engineering, including especially uncertainty in rainfall-runoff and stream water-quality modeling"
Licensed Professional Engineer: Arizona (since 1991), Illinois (since 1992), Wisconsin (2015)

Student Awards

1988: Chester P. Seiss Civil Engineering Graduate Student Award for Outstanding Scholastic Achievement and Promise for Research, University of Illinois at Urbana-Champaign
1981: ASCE - Arizona State University Outstanding Senior Award
1981: ASCE - Pacific Southwest Conference (student) Paper Contest, 1st Place 1981 ("Portable Flow Measuring Flumes for Earthen Channels" unpublished)

Professional Society Membership

American Society of Civil Engineers, American Academy of Water Resources Engineers, International Association of Hydrological Sciences, American Academy of Environmental Engineers and Scientists (Board Certified Environmental Engineer with a specialization in General Environmental Engineering)