ATTILA NEMES
CURRICULUM VITAE

NIBIO
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EDUCATION

2003	PhD (Environmental Sciences – research area: soil physics and hydrology) Wageningen University and Research Centre, Wageningen, The Netherlands
1994	MSc (Department of Water Resources and Amelioration) Faculty of Agriculture, Agricultural University of Gödöllõ, Hungary

CURRENT POSITION

2012 –	research professor, Norwegian Institute for Bioeconomy Research (NIBIO), Ås, Norway (Division of Environment and Natural Resources)

PREVIOUS POSITIONS

2007 – 2012	Faculty Research Associate, PSLA, University of Maryland (on research assignment at USDA-ARS Crop Systems & Global Change Lab (CSGCL)) Beltsville, Maryland, USA
2004 – 2007	Post-doctoral Research Assoc., Dept. Environ. Sci., Univ. of California Riverside (on research assignment at USDA-ARS Hydrology & Remote Sensing Lab (HRSL)) Beltsville, Maryland, USA
2003 – 2004	Visiting Scientist, USDA-ARS Hydrology & Remote Sensing Lab, Beltsville, MD, USA
1999 – 2002	PhD fellow, Wageningen Univ. and Research Centre, Wageningen, The Netherlands
1999	Visiting Scientist, USDA-ARS Salinity Laboratory (USSL), Riverside, CA, USA
1996 – 1998	Visiting Scientist, SC-DLO Winand Staring Centre (later ALTERRA), Wageningen, NL
1994 – 1996	Scientist, Res. Inst. Soil Sci. & Agric. Chem., Hung. Acad. Sci., Budapest, Hungary

FIELDS OF INTEREST

- characterization of soil structure and its development, climate-soil interactions
- characterization of flow pathways in the landscape
- environmental simulation modelling
- estimation of key soil properties for environmental modeling (pedotransfer methods)
- database management, harmonization, quality assurance
- data mining and exploration using machine learning techniques
- field/laboratory experimentation on soil water transport and storage

KEY QUALIFICATIONS

- Trained in agronomy and tropical-subtropical agriculture, specialized in soil physics and hydrology
- Skilled in programming and statistical analysis (e.g. *MATLAB, SAS, S-Plus, R – experience varies)*
- User and programmer of data mining and exploration tools (*e.g. GMDH, ANN, k-NN, CART, etc.)*
- Experienced in database management *(MS Access, Oracle)*
- Experienced in field and laboratory experimentation in soil research
- Understanding of and experience with environmental simulation models *(e.g. SWAP, APEX)*
- Self-trained in public speaking *(Distinguished Toastmaster (DTM))*
- Experienced in project development (*team building, project acquisition and management, critical readership, publishing and editorial experience*)

COMMISSIONS OF TRUST

2019 –	Editorial Board Member, Assoc. Editor (Revista Brasileira de Ciencia do Solo – Brazil)
2019 –	Review Editor (Frontiers in Water)
2015 – 2019	Ed. Board Member, Assoc. Ed. (Methods of Soil Anal. – USA)
2014 –	Ed. Board Member (Pedosphere – China)
2014 –	Adv. Board Member (Agrokémia es Talajtan (Agrochem. & Soil Sci. - Hungary))
2012 –	Ed. Board Member (Journal of Agricultural Engineering – Italy)
2011 –	Ed. Board Member, Assoc. Editor (Arid Land Research and Mgmt. – USA)
2005-11 & 2014– 2019	Ed. Board Member, Assoc. Editor (Soil Sci. Soc. America J. – USA)
2000 –	invited reviewer to 33 intl' scientific journals, cca. 190 completed reviews to date

AWARDS OF MERIT

2013	promotion to '*Code 1183, Professor Competence*'
2008, 2018	Soil Sci. Soc. America Journal, Editor's Citation for Excellence as Associate Editor
2004	Soil Sci. Soc. America Journal, Editor's Citation for Reviewer Excellence

FUNDING AND PROJECT LEADERSHIP HISTORY

2020-2025	H2020-SFS-23-2019 project OPTAIN: Optimal strategies to retain and re-use water and nutrients in small agricultural catchments across different soil-climatic regions in Europe (partner coordinator, total budget: 7000000 EUR, partner budget: 818000 EUR)
2017-2019	Norwegian Agriculture Ministry project BUFFERCLIMA: Selection of vegetation in buffer zones for the best possible cleaning effect and reduced erosion (participating scientist, total budget: 1.6 mNOK, ca. 172000 EUR)
2016-2019	Hungarian Research Council (NKFI-OTKA) Researcher project (K119475): *Use of structural properties for improving prediction methods in soil systems wetting by water or non-polar liquids.* (PI at NIBIO, total budget: 40.98 mHUF (ca. 132200 EUR)
2015-2019	Norwegian Research Council (FRIPRO program ES511251) SOILSPACE: *Quantifying Soil Structure to Augment the Relevance of Laboratory-Based Soil Hydraulic Properties for Environmental Modelling.* (PI, total budget: 8.397 mNOK (ca. 909600 EUR)
2014-2017	EEA Financial Mechanism (Estonia-Norway), Integrated Marine and Inland Water Mgmt. Program: NORRA: "*Development of data-modelling system and the decision support tool for the integrated marine and inland water management*" (participating scientist, total budget: 2044000 EUR)
2012-2013	Norwegian Min. Educ. & Research, North America Collab. Grant (PNA-2012/10067) (co-PI, budget: 150000 NOK (ca. 22000 EUR))

FELLOWSHIPS AND MOBILITY GRANT AWARDS

2006	Wilford Gardner IUSS Congress Fellowship, U.S. National Academy of Sciences
2001	OMFB Mecenatura Grant Award, Hungary
1999	PhD Grant Award, Wageningen Agricultural University, The Netherlands
1999, 2000	NATO Collaborative Linkage Grant (EST.CLG 975761, CLG – 977034)
1999	Huygens Fellowship, NUFFIC, The Netherlands
1998, 2000, 2001	IAC Fellowship, Ministry of Agric., Nature Mgmt. & Fisheries, The Netherlands
1997	Hungarian State Eötvös Fellowship
1996	Fellowship of the Hungarian Fellowship Board (MÖB)
1996	EU TEMPUS Individual Mobility Grant Award
1995, 1997, 1999	SOROS Foundation Mobility Grant Awards
1993, 1993	2 x EU TEMPUS Scholarship (1993 spring, 1993 fall)

SUPERVISION OF GRADUATE STUDENTS AND RESEARCH FELLOWS

2020	external advisor to Andras Sebok (PhD at Szent Istvan University, Hungary)
2019	external advisor to Anna Angyal (MSc at Szent Istvan University, Hungary)
2018	external advisor to Aoesta Mohammed (PhD at University of Kansas, KS, USA)

2011	external advisor to Yves-Dady Botula (PhD at University of Ghent, Belgium)
2011	committee member to Brigitta Tóth (PhD at University of Pannonia, Hungary)
2011	external advisor to Aubrey Shirley (MSc at University of Georgia, GA, USA)
2009	external advisor to Nasrin Gharahi Ghehi (PhD at University of Ghent, Belgium)
2008	committee member to Sung Won Yoon (PhD at Rutgers University, NJ, USA)
2008	external examiner to Grant Tranter (PhD at University of Sydney, Australia)

CITATION RECORD (self-citations not filtered, accessed 13 March 2020)**:**

1850 (Scopus:	39 listed documents, h-index: 21)
2616 (Researchgate:	72 listed documents, h-index: 24)
3411 (Google Scholar:	114 listed documents, h-index: 26)

CATALOG OF JOURNAL PUBLICATIONS, BOOKS, BOOKCHAPTERS, PROCEEDINGS, ABSTRACTS, CONFERENCE PRESENTATIONS AND OTHER PUBLICATIONS (as 1st author in brackets)

peer-reviewed journals	37 (16)
books, bookchapters (refereed):	8 (3)
books, bookchapters (non-refereed):	9 (1)
proceedings of conferences and symposia:	16 (10)
abstracts:	87 (41)
other/reports:	5 (1)

LIST OF PEER REVIEWED PUBLICATIONS IN SCIENTIFIC JOURNALS

Dam, J.C. van, J.H.M Wösten, A. Nemes. (1996). Unsaturated soil water movement in hysteretic and water repellent field soils. Journal of Hydrology 184: 153-173.

Nemes, A., J.H.M. Wösten, A. Lilly. (1998). Proposal for a national database of soil hydraulic functions in Hungary. Agrokémia és Talajtan 47(1-4): 39-48.

Wösten, J.H.M., A. Lilly, A. Nemes and C. Le Bas. (1999). Development and use of a database of hydraulic properties of European soils. Geoderma 90: 169-185.

Nemes, A., J.H.M. Wösten, A. Lilly and J.H. Oude Voshaar. (1999). Evaluation of different procedures to interpolate the cumulative particle-size distribution to achieve compatibility within a soil database. Geoderma 90: 187-202.

Nemes, A., M.G. Schaap, F.J. Leij and J.H.M. Wösten. (2001). Description of the unsaturated soil hydraulic database UNSODA version 2.0. Journal of Hydrology 251(3-4): 151-162. Database source: http://www.ussl.ars.usda.gov/MODELS/unsoda.htm

Nemes, A. (2002). Unsaturated soil hydraulic database of Hungary: HUNSODA. Agrokémia és Talajtan 51(1-2): 17-26.

Nemes, A., I. Czinkota, Gy. Czinkota, L. Tolner and B. Kovács. (2002). Outline of an automated system for the quasi-continuous measurement of particle-size distribution. Agrokémia és Talajtan 51(1-2): 37-46.

Nemes, A., M.G. Schaap and J.H.M. Wösten. (2003). Functional Evaluation of Pedotransfer Functions Derived from Different Scales of Data Collection. Soil Sci. Soc. Am. J. 67(4): 1093-1102.

M.G. Schaap, A. Nemes and M.Th. van Genuchten. (2004). Comparison of models for indirect estimation of water retention and available water in surface soils. Vadose Zone J. 3(3): 1455-1463.

Nemes, A., W.J. Rawls and Ya.A. Pachepsky. (2005). Influence of organic matter on the estimation of saturated hydraulic conductivity. Soil Sci. Soc. Am. J. 69(4): 1330-1337. Published online 28 June 2005; doi:10.2136/sssaj2004.0055.

Nemes, A., J.H.M. Wösten, J. Bouma and Gy. Várallyay. (2006). Soil water balance scenario studies using predicted soil hydraulic parameters. Hydrological Processes 20(5): 1075-1094. Online: 18 Oct 2005; DOI: 10.1002/hyp.5934.

Nemes, A. and W.J. Rawls. (2006). Evaluation of different representations of the particle-size distribution to predict soil water retention. Geoderma 132(1-2): 47-58.

Nemes, A., W.J. Rawls and Ya.A. Pachepsky. (2006). Use of a non-parametric nearest-neighbor technique to estimate soil water retention. Soil Sci. Soc. Am. J. 70(2): 327-336. DOI: 10.2136/sssaj2005.0128.

Nemes, A., W.J. Rawls, Ya.A. Pachepsky and M.Th. van Genuchten. (2006). Sensitivity Analysis for the Non-Parametric Nearest Neighbor Technique to Estimate Soil Water Retention. Vadose Zone J.5:1222-1235.

Lilly, A., A. Nemes, W.J. Rawls and Ya.A. Pachepsky. (2007). Probabilistic approach to the identification of input variables to estimate hydraulic conductivity. Soil Sci. Soc. Am. J. 72: 16-24.

Rawls, W.J., A. Nemes, Ya.A. Pachepsky and K.E. Saxton. (2007). Using the NRCS National Soils Information System (NASIS) to provide soil hydraulic properties for engineering applications. Trans ASABE. 50(5): 1715-1718.

Nemes, A., R.T. Roberts, W.J. Rawls, Ya.A. Pachepsky and M.Th. van Genuchten. (2007). Software to estimate –33 and –1500 kPa soil water retention using the non-parametric k-Nearest Neighbor technique. Environmental Modelling and Software 23: 254-255. doi:10.1016/j.envsoft.2007.05.018.

Pachepsky, Ya.A., D. Gimenez, A. Lilly, A. Nemes. (2008). Promises of Hydropedology. CAB Reviews. Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources. 3(40):19.

Guber, A.K., Ya.A. Pachepsky, M.Th. van Genuchten, J. Simunek, D. Jacques, A. Nemes, T.J. Nicholson and R.E. Cady. (2008). Multimodel simulation of water flow in a field soil using pedotransfer functions. Vadose Z. J. 8(1): 1-10.

Nemes, A., D.J. Timlin, Ya.A. Pachepsky and W.J. Rawls. (2009). Evaluation of the Rawls et al. (1982) pedotransfer functions for their applicability at the U.S. national scale. Soil Sci. Soc. Am. J. 73: 1638-1645. doi:10.2136/sssaj2008.0298.

Nemes, A., D.J. Timlin, B. Quebedeaux. (2010). Ensemble approach to provide uncertainty estimates of soil bulk density in support of simulation-based environmental risk assessment studies. Soil Sci. Soc. Am. J. 74(6):1938-1945. doi:10.2136/sssaj2009.0370

Nemes, A., Ya.A. Pachepsky, D.J. Timlin (2011). Toward improving global estimates of field soil water capacity. in Soil Sci. Soc. Am. J. 75:807-812. doi:10.2136/sssaj2010.0251.

Yoon, S-W., D. Gimenez, A. Nemes, H.-C. Chun, Y.-S. Zhang, Y.-K. Sonn, S.-S. Kang, M.-S. Kim, Y.-H. Kim, S.-K. Ha. (2011). Use of the Quantitatively Transformed Field Soil Structure Description of the US National Pedon Characterization Database to Improve Soil Pedotransfer Function Korean J. Soil Sci. and Fert.; 44(5): 944-958. DOI:10.7745/KJSSF.2011.44.5.944.

Gharahi Ghehi, N., A. Nemes, A. Verdoodt, E. Van Ranst, W.M. Cornelis, P. Boeckx. (2012). Use of the Nonparametric Nearest Neighbor and Boosted Regression Tree techniques to estimate soil bulk density in tropical rainforest soils. Soil Sci. Soc. Am. J. 76(4): 1172-1183. doi:10.2136/sssaj2011.0330

Botula, Y.-D., A. Nemes, M. Mbe-Mpie, E. Van Ranst, W.M. Cornelis. (2013). Prediction of water content of soils from the humid tropics by the non-parametric nearest neighbor approach. Vadose Z. J. doi: 10.2136/vzj2012.0123

Tóth, B., M. Weynants, A. Nemes, A. Makó, G. Bilas and G. Tóth. (2014). New generation of hydraulic pedotransfer functions for Europe. Eur. J. Soil Sci. doi: 10.1111/ejss.12192.

Botula, Y.-D., A. Nemes, E. Van Ranst, P. Mafuka, J. De Pue, W. Cornelis. (2015). Hierarchical pedotransfer functions to predict bulk density of highly weathered soils in Central Africa. Soil Sci. Soc. Am. J. 79(2):476-486.

Maniruzzaman, M., M.S.U. Talukder, M.H. Khan, J.C. Biswas, and A. Nemes. (2015). Validation of the AquaCrop Model for Irrigated Rice Production under Varied Water Regimes in Bangladesh. Agric. Water Manage. 159: 331-340 DOI: 10.1016/j.agwat.2015.06.022

Xenarios, S., H. Polatidis, M. McCartney, and A. Nemes. (2015). Developing a User-Based Decision-Aid Framework for Water Storage Systems in Sub-Saharan Africa. The Case of Blue Nile Basin in Ethiopia. Water Economics and Policy. DOI: 10.1142/S2382624X15500125

Nemes, A. (2015). Why do they keep rejecting my manuscript - Do's and don'ts and new horizons in pedotransfer studies. Agrokémia és Talajtan 64(2): 361-371. DOI: 10.1556/0088.2015.64.2.4

Xenarios, S., A. Nemes, G.W. Sarker, U.S. Nagothu. (2016). Assessing vulnerability to climate change: are communities in flood-prone areas in Bangladesh more vulnerable than those in drought-prone areas? Water Resources and Rural Development. doi:10.1016/j.wrr.2015.11.001

Bayat, H., M. Rastgou, A. Nemes, M. Mansourizadeh, P. Zamani. (2017). Mathematical models for soil particle-size distribution and their overall and fraction-wise fitting to measurements. Eur. J. Soil Sci. 68: 345-364.

Van Looy K., J. Bouma, M. Herbst, J. Koestel, B. Minasny, U. Mishra, C. Montzka, A. Nemes, … H. Vereecken (19 authors) (2017). Pedotransfer functions in Earth system science: challenges and perspectives. Reviews of Geophysics 55: 1199–1256. https://doi.org/10.1002/2017RG000581

Hirmas, D.R., D. Giménez, A. Nemes, R. Kerry, N.A. Brunsell, C.J. Wilson. (2018). Climate-induced changes in continental-scale soil macroporosity may intensify water cycle. Nature 561: 100–103.

Koestel, J., A. Dathe, T.H. Skaggs, O. Klakegg, M.A. Ahmad, M. Babko, D. Giménez, C. Farkas, A. Nemes, N. Jarvis. (2018). Estimating the permeability of naturally structured soil from percolation theory and pore space characteristics imaged by X-ray. Water Resources Research 54(11): 9255-9263. doi:10.1029/2018WR023609

Mohammed, A.K., D.R. Hirmas, A. Nemes, D. Giménez. (2020). Exogenous and endogenous controls on the development of soil structure. Geoderma 357: 113945. https://doi.org/10.1016/j.geoderma.2019.113945.

Sebők, A., V. Labancz, I. Czinkota, A. Nemes. (2020). The effect of various metal-salts on the sedimentation of soil in a water-based suspension. PLoS ONE 15(1): e0227338. https://doi.org/10.1371/journal.pone.0227338