

Arnaud J.A.M. Temme, Ph.D.

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a. Professional Preparation

Wageningen University, the Netherlands

Doctor of Philosophy, Geomorphology	December 2008
Master of Science, Soil Inventory and Land Evaluation	May 2003
Master of Science, Geo-information Science <i>with distinction</i>	April 2003

In the Netherlands, BSc-degrees did not exist until after I started my MS degree work.

b. Appointments

January 2022 – now	Kansas State Univ., Geography and Geospatial Sc.	Full Prof.
Aug 2016 – Jan 2022	Kansas State Univ., Geography and Geospatial Sc.	Associate Prof.
Jan-Aug 2016	Wageningen Univ., Soil Geography and Landscape	Associate Prof.
2009-2015	Wageningen Univ., Land Dynamics	Assistant Prof.

c. Publication overview

All data from Scopus on April 1, 2022:

- 64 peer-reviewed international journal articles and 4 refereed book chapters.
- My H-index is 23, and my publications have received 1605 citations.
- I have presented and/or convened sessions at more than 30 professional conferences in my career, most recently the American Geophysical Union's Fall meeting (December 2021).
- In recent years, I have focused on higher impact journals (meaning top 10% journals in the discipline), resulting in publications in PNAS, Earth Science Reviews and Geophysical Research Letters, among others.

Peer-reviewed journal articles (most recent 10)

1. Rymer, K.G., Rachlewicz, G., Buchwal, A., (.**Temme.**), Reimann, T., van der Meij, W.M., Contemporary and past aeolian deposition rates in periglacial conditions (Ebba Valley, central Spitsbergen). **Catena** 211, 2022
2. Meng, X., Kooijman, A.M., **Temme**, A.J.A.M., Cammeraat, E.L.H. , The current and future role of biota in soil-landscape evolution models. **Earth-Science Reviews** 226, 2022
3. **Temme**, A.J.A.M., Van der Kroef, I., Stoof, C.R., Ketterer, M.E., Large short-range variation in soil properties in a natural grassland indicates non-tree related catena disruption. **Catena**, 2022
4. Van de Velde, **Temme** et al, Emerging forest-peatland bi-stability and resilience of European peatland carbon stores, **Proceedings of the National Academy of Sciences**, 2021

5. Román-Sánchez, A., **Temme**, A., Willgoose, G., van den Berg, D., Gura, C.M., Vanwallegghem, T. The fingerprints of weathering: Grain size distribution changes along weathering sequences in different lithologies (2021) **Geoderma**, 383, art. no. 114753, .
6. Veldkamp, A., Schoorl, J.M., Claessens, L., **Temme**, A.J.A.M., Broers, A.G.M., van Orsouw, T.L., Voesten, M.T.C.M., Reimann, T. Preservation of the last aggradation phase in climate-driven terraces: Evidence from Late Quaternary reach-specific fluvial dynamics of the Allier River (France) (2020) **Earth Surface Processes and Landforms**, 45 (13), pp. 3381-3395.
7. Marijn Van Der Meij, W., J. A. M. **Temme**, A., Wallinga, J., Sommer, M. Modeling soil and landscape evolution - The effect of rainfall and land-use change on soil and landscape patterns (2020) **SOIL**, 6 (2), pp. 337-358.
8. **Temme**, A., Guzzetti, F., Samia, J., Mirus, B.B. The future of landslides' past—a framework for assessing consecutive landsliding systems (2020) **Landslides**, 17 (7), pp. 1519-1528.
9. Angelini, M.E., Kempen, B., Heuvelink, G.B.M., **Temme**, A.J.A.M., Ransom, M.D. Extrapolation of a structural equation model for digital soil mapping (2020) **Geoderma**, 367, art. no. 114226,
10. Langston, A.L., **Temme**, A.J.A.M. Impacts of Lithologically Controlled Mechanisms on Downstream Bedrock Valley Widening (2019) **Geophysical Research Letters**, 46 (21), pp. 12056-12064.

Published peer-reviewed bookchapters:

1. Botha, G.A., **Temme**, A.J.A.M., Singh, R.G. Colluvial deposits and slope instability (2016) Quaternary Environmental Change in Southern Africa: Physical and Human Dimensions, pp. 137-152.
2. Claessens, L., **Temme**, A.J.A.M., Schoorl, J.M. Mass-Movement Causes: Changes in Slope Angle 2013 **Treatise on Geomorphology** 7 212 216
3. **Temme**, A.J.A.M., Schoorl, J.M., Claessens, L., Veldkamp, A. Quantitative Modeling of Landscape Evolution 2013 **Treatise on Geomorphology** 2 180 200 5
4. **Temme**, A.J.A.M., Heuvelink, G.B.M., Schoorl, J.M., Claessens, L. Geostatistical simulation and error propagation in geomorphometry 2009 **Developments in Soil Science** 33 C 121 140 23

Recently accepted publications:

1. **Temme**, A.J.A.M., Schoorl, J.M., Claessens, L., Veldkamp, A. Quantitative Modeling of Landscape Evolution **Treatise on Geomorphology**, second edition 2021 (bookchapter)

d. Graduate students

- I have supervised 26 MS/MSc students to successful graduation. One more MSc student is in progress.
- I have supervised 5 PhD students to successful defense. I provide a list below. Three more PhD students are in progress.
- Graduate students are first author on 22 of my publications, and co-author on 5.
- I have mentored 2 postdoctoral researchers, for a total of 4 years, in the context of a project that specifically called for high-risk, high-impact publications. This led to publications in *Global Change Biology* (IF 8.5) and in *PNAS* (IF 9.4).

Graduate students – PhD

2020	Marijn van der Meij	Co-evolution of soils and landscapes in the Anthropocene: from natural to intensively managed landscapes
2018	Jalal Samia	Landslide path dependency and its impact on space-time modelling of landslide susceptibility
2017	Rens Masselink	Getting a grip on hydrological and sediment connectivity
2014	Wouter van Gorp	From basalts to badlands: modelling long-term landscape response to lava damming of an upland catchment in western Turkey
2012	Jantiene Baartman	Mind the gap: modelling event-based and millennial-scale landscape dynamics

e. Research funding

As PI, I have received 14 grants during my career, for a total of \$1,090,000
(considering only those parts of grants where I am the PI).

Research funding received

2020	Purdue PRIME Lab seed funding (~7k USD): Quaternary Geochronology of Hillslope Evolution in Layer Cake Stratigraphy – Quantifying Block Release and Movement
2019	USDA NRCS: Disaggregating SSURGO soil maps across large areas using existing qualitative knowledge and modern datasources (150k USD)
2017	Kansas State University's funding for a PhD student recruitment weekend in Spring 2018 (~2k USD).
2017	USDA's National Robotics Initiative. Proposal centred on the use of steep lands for robotic agriculture. My role (~43k USD) centred on GIS and soil-landscape relations
2017	Kansas State University's University Small Research Grant, ~3.5k USD
2015	Funding of a PhD that I supervise in Wageningen by a German institute (ZALF, ~200k EUR). Soil-landscape relations in a catchment under historical and present agricultural use.
2015	Funding by the University of Zürich on a soil-landscape modelling project (~4.5kCHF)
2014	British Society for Geomorphology Research Grant of 750 GBP for work on measuring the soil impact of full depth avalanches
2014	Funding for a Holocene landscape evolution modelling study supporting archaeological work in the east of the Netherlands (~40k EUR)
2013	PI of a complexity-science program focussing on development of smart landscapes that minimize the chances of catastrophic shifts (Wageningen University, 400k EUR – 5yr postdoc).
2012	CIRES Sabbatical Scholarship (CU Boulder, CO, USA – 9k USD)
2012	Dutch government funding for development of methodology for World Soil Map (~7k and 30k EUR)
2009	Dutch government funding for modelling the spatial pattern of intensive and extensive agriculture at European Scale (~43k EUR)

Other funding

- 2017 Kansas State University's Large Equipment Grant for the acquisition of a Ground Penetrating Radar instrument (~22k USD)

Recent grant proposals declined

- 2020 (USDA-NRCS, \$323,000) Large-scale disaggregation of SSURGO polygons using legacy soil survey data and machine learning, with specific attention for hydric soils
- 2020 (NSF GLD, \$226,000). The legacies of landslides: understanding path-dependence, quantifying landscape impacts, and improving susceptibility assessments
- 2018 (NSF GSS, \$309,000). Catastrophic shift or soft landing?

f. Service to the national and international professional community

I serve as one of the editors-in-chief of *Catena*. In the 2.5 years in this role, I have made decisions on more than 400 manuscripts, helped by our great community of reviewers from all around the world. Additionally:

- I served as editor for the *Journal of Soils and Sediments* from 2017-2019.
- I annually review about a dozen manuscripts for other international journals.
- Once or twice a year, I review non-English manuscripts for German or French national journals or co-judge student theses for national prizes in German or French-speaking countries
- I have served as the 2018 regional chair of the Great Plains / Rocky Mountains region of the American Association of Geographers. The main responsibility of this period was the organization of the 2018 regional conference on our Manhattan campus, where we received more than 130 geographers.
- I have served on the program and website committees of the European Geosciences Union while employed in the Netherlands
- I am part of the team of reviewers evaluating student proposals for the Geomorphology and the Soil Process divisions of the Geological Society of America.
- I have twice served as panelist for NSF, most recently in 2020, and have served as external reviewer for grant proposals from funding agencies in the Netherlands, Hungary, France, Poland, and the state of Minnesota.
- I have served as external committee member / examiner for PhD defenses from France (Mines ParisTech), Spain (University of Cordoba) and Texas (University of Texas).

g. Outreach to the general public

I greatly enjoy talking to the general public about my science, and the landscapes that science allows me to traverse. I am a fan of Alexander von Humboldt in this regard – possibly the greatest geographer of all time, who famously married pure science reporting with expressing what he felt during those journeys.

- In 2021, I wrote [an editorial in the *Manhattan Mercury*](#), a local newspaper, calling for the 'drawing of imaginary lines on the Kansas landscape'.
- I have a YouTube channel ([Earth System-Antics](#)) with brief 5-minute long videos explaining physical geography topics using items visible during my trips.
- I provided a video-taped explanation of frozen soils in the Tropics (for instance in the high Andes and on Kilimanjaro) for a Massive Open Online Course on Tropical Soils. This course, with my contribution, has become very successful with over 2000 students from 125 countries, and was [a finalist for the dX prize for exceptional contributions to online learning](#) in 2020.