

Curriculum vitae Jaap Nienhuis

Name	Jacob Harm (Jaap) Nienhuis	Email	jnienhui@tulane.edu
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Phone	+1 774-521-8097	Date of birth	May 12, 1988

EDUCATION

PhD **MIT / WHOI**, Marine Geology & Geophysics, 2015
Concentrations: Tidal Inlets, River Deltas, Bedforms
Thesis: *Plan-view evolution of wave-dominated deltas*
Advisors: A. Ashton (WHOI), L. Giosan (WHOI), T. Perron (MIT)

MSc **University of Twente**, Civil Engineering (*cum laude*), 2011
Concentrations: Hydro/Morphodynamics, Hydraulic engineering, Flow networks
Thesis: *Modeling deltaic response to changes in fluvial sediment delivery*
Advisors: A. Ashton (WHOI), P. Roos (UTwente), S. Hulscher (UTwente)

BSc **University of Twente**, Civil Engineering, 2009
Minor/pre-master: Mathematics, Stochastic operations research
Thesis: *The usage of Cooperative/Adaptive Cruise Control*
Advisors: S. Shladover (UCBerkeley), B. van Arem (UTwente)

EMPLOYMENT

2016/01– **Tulane University** Earth and Environmental Science Postdoctoral Fellow

2012/09-2015/12 **MIT / WHOI** Geology and Geophysics Graduate Research Assistant

2012/03-2012/09 **Woods Hole Oceanographic Institution** Guest Investigator
Researching behaviour of river deltas experiencing changes in fluvial sediment supply

2011/11-2012/03 **Royal Haskoning** DTS Analyst
Developing algorithms to use distributed temperature sensing in urban drainage networks

2011/02-2011/07 **Woods Hole Oceanographic Institution** Guest Student
Modeling deltaic shoreline development (MSc thesis)

2009/05-2009/08 **University of California, Berkeley** Visiting Research Scholar
Researching transportation networks (BSc thesis)

TEACHING

2016 **Tulane University** Marine Environmental Geology (guest instructor for 6 lectures)

2015 – 2014 **MIT** MATLAB Bootcamp (instructor)

2011 **University of Twente** Cost Management & Engineering (teaching assistant)

2011 **University of Twente** Modeling B (teaching assistant)

2011 – 2008 **University of Twente** Finance & Accounting (teaching assistant)

HONORS/AWARDS

2015 AGU Fall Meeting Outstanding Student Paper Award

2014 CSDMS Annual Meeting Best Poster Award

2014 WHOI Deep Ocean Exploration Graduate Student Fellowship

2014 WHOI Ocean Ventures Fund Grant

2014 GSA Graduate Student Research Grant

2013 CSDMS Annual Meeting student keynote talk

2011 Graduated *cum laude* from the University of Twente

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2011	Royal Dutch Society of Engineers travel grant
2010	Dutch Nomination at the International Meuse Symposium in Liege, BE
2010	Nominated for the University of Twente thesis prize

ADDITIONAL EXPERIENCE

2016	Convener AGU Fall Meeting Session Coastal Geomorphology and Morphodynamics
2016	Mississippi delta fieldwork: sediment coring in oxbow lakes for paleoflood reconstruction
2016	Mississippi delta fieldwork: drilling wells for the installation of fiber-optic compaction meters
2015	National Center for Earth-surface Dynamics summer school, New Orleans
2015 – 2013	Board member/organizer for the MIT EAPS students association
2014	Danube delta fieldwork (PI): collecting electrical resistivity data and OSL samples
2014	WHOI Coastal field methods field school, Woods Hole
2014	BanglaPIRE delta and tectonics field school, Bangladesh
2012	Mississippi delta fieldwork: sediment coring in oxbow lakes for paleoflood reconstruction
2012	National Center for Earth-surface Dynamics summer school, Minneapolis
2012 – 2006	Cub Scout leader at Tecumseh, Haren, NL
2011 – 2008	Photographer, events/portraits/workshops
2010 – 2007	Board member/organizer for the UTwente photography club, UTwente floorball club and others

MISCELLANEOUS

Reviewer	Geophysical Research Letters, Journal of Geophysical Research, Marine Geology, GSA Bulletin
Invited Talks	Water Institute of the Gulf (2016), AGU Ocean Sciences Press Conference (2016), University of Minnesota Twin Cities (2016), Los Alamos National Laboratory (2015), WHOI Coastal Ocean Fluid Dynamics Laboratory Seminar (2015)
Languages	Dutch (native speaker), English (fluent), German (basic)
Programming	C, Matlab

PEER REVIEWED PUBLICATIONS

- Nienhuis, J. H., A. D. Ashton, and L. Giosan (2016), Littoral steering of deltaic channels, *Earth Planet. Sci. Lett.*, 453, 204–214, doi:10.1016/j.epsl.2016.08.018.
- Nienhuis, J.H., Ashton, A.D., Nardin, W., Fagherazzi, S., Giosan, L. (2016) Alongshore sediment bypassing as a control on river mouth morphodynamics, *J Geophys. Res. Earth Surf.* 121, 664-683, doi:10.1002/2015JF003780
- Ashton, A.D., Nienhuis, J.H., Ells, K. (2016) On a neck, on a spit: controls on the shape of free spits. *Earth Surf. Dynam.*, 4, 193-210, doi:10.5194/esurf-4-193-2016
- Nienhuis, J. H., A. D. Ashton, and L. Giosan (2015), What makes a delta wave-dominated?, *Geology*, 43(6), 511–514, doi:10.1130/G36518.1.
- Nienhuis, J.H., Perron, J.T., Kao, J.C.T. & Myrow, P.M. (2014) Wavelength selection and symmetry breaking in orbital wave ripples. *J. Geophys. Res. Earth Surf.* 119, 2239–2257, doi: 10.1002/2014JF003158. (*AGU Eos Research Highlight*)
- Vosse, M., Schilperoord, R., Haan, C. de, Nienhuis, J.H., Tirion, M., Langeveld, J.G. (2013) Processing of DTS monitoring results: automated detection of illicit connections, *Water Practice & Technology*, 8(3-4), 375-381, doi:10.2166/wpt.2013.037
- Nienhuis, J.H., A. D. Ashton, P.C. Roos, S.J.M.H. Hulscher, and L. Giosan (2013) Wave reworking of abandoned deltas, *Geophys. Res. Lett.*, 40, 5899–5903, doi:10.1002/2013GL058231
- Nienhuis, J.H., C. de Haan, J. Langeveld, M. Klootwijk, and F. Clemens (2013) Assessment of detection limits of fiber-optic distributed temperature sensing for detection of illicit connections, *Water science and technology*, 67(12), 2712-2718.
- Ashton, A.D., E.W.H. Hutton, A.J. Kettner, F. Xing, J. Kallumadikal, J.H. Nienhuis, and L. Giosan (2013) Progress in coupling models of coastline and fluvial dynamics, *Computers & Geosciences*, 53, 21-29

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PUBLICATIONS IN REVIEW OR PREPARATION

- Nienhuis, J.H., Ashton, A.D. (*in revision for JGR*) Mechanics and rates of tidal inlet migration: modeling and application to natural examples
- Nienhuis, J.H., Ashton, A.D., Giosan, L., Kettner, A.J. (*in preparation for ESurf*) Using simple models to constrain the late Holocene evolution of the Ebro Delta

OTHER PUBLICATIONS

- Nienhuis, J. H. (2016) Plan-view evolution of wave-dominated deltas (doctoral dissertation), MIT-WHOI Joint Program in Oceanography, Marine Geology & Geophysics, doi: 10.1575/1912/7742
- Nienhuis, J. H., A. D. Ashton, W. Nardin, S. Fagherazzi, and L. Giosan (2015), Breaking-Wave-Driven Sediment Bypassing of River Mouths: Mechanisms and Effects on Delta Evolution, in *The Proceedings of the Coastal Sediments 2015*, edited by P. Wang, J. Rosati, and J. Cheng, World Scientific Pub Co Inc, San Diego, USA, doi: 10.1142/9789814689977_0158
- Vosse, M., Schilperoord, R., Haan, C. de, Nienhuis, J.H., Tirion, M., Langeveld, J.G. (2012) Processing of DTS monitoring results: automated detection of illicit connections. IWC Conference, Amsterdam, NL
- Nienhuis, J.H., Haan, C. de, Langeveld, J.G., Klootwijk, M., Clemens, F.H.L.R. (2012) Assessment of detection limits of fiber-optic distributed temperature sensing for detection of illicit connections, Urban Drainage Modelling, Belgrade, Serbia
- Nienhuis, J.H., A.D. Ashton, P.C. Roos, S.J.M.H. Hulscher, Giosan, L. (2012) Modeling deltaic response to changes in fluvial sediment delivery, NCK days, Netherlands center for coastal research, Enschede, Netherlands.
- Nienhuis, J.H. (2011) Deltaic response to fluvial sediment elimination, *Conceptueel* 20 (4), 15-18
- Shladover, S.E., X.Y. Lu, D. Cody, C. Nowakowski, T.Z. Qiu, A. Chow, J. O'Connell, J.H. Nienhuis, D. Su (2011) Development and Evaluation of Selected Mobility Applications for VII, in *UCB-ITS-PRR-2010-25*, PATH, UC Berkeley, Berkeley.
- Nienhuis, J. H. (2011) Modeling deltaic response to changes in fluvial sediment delivery (MSc thesis), University of Twente, Twente Water Centre, url: essay.utwente.nl/61060/
- Nienhuis, J. H. (2009) Automating the drivers' behaviour: the use of Cooperative/Adaptive Cruise Control (BSc thesis), University of Twente, Centre for Transport Studies, url: essay.utwente.nl/68776/

ABSTRACTS

- Nienhuis, J.H., Tornqvist, T.E., Esposito, C.R. (2016) How much land for your sand: effects of vegetation and compaction on crevasse splay formation. AGU Fall Meeting, San Francisco, CA
- Nienhuis, J.H., Ashton, A.D., Kettner, A.J., Edmonds, D.A., Rowland, J.C., Tornqvist, T.E. (2016) Predicting coastal deltaic change on a global scale. CSDMS Annual Meeting, Boulder, CO
- Nienhuis, J.H., Ashton, A.D. (2016) Quantifying tidal inlets as a sink of littoral sediment. GSA South Central Meeting, Baton Rouge, LA
- Nienhuis, J.H., Ashton, A.D., Kettner, A.J., Edmonds, D.A., Rowland, J.C. (2016) Predicting coastal deltaic change on a global scale. Ocean Sciences Meeting, New Orleans, LA
- Nienhuis, J.H., Ashton, A.D. (2015) Wave-driven tidal inlet migration: mechanics and effects on barrier morphology. AGU Fall Meeting, San Francisco, CA (*outstanding student paper award*)
- Ashton, A.D., Biolchi, L.G., Nienhuis, J.H. (2015) The First Guess: Testing predictions of coastal change from shoreline orientation and wave climate along Cape Cod and the U.S. Eastern Coast. AGU Fall Meeting, San Francisco, CA
- Nienhuis, J.H., Traykovski, P.A., Samuelson, K., Perron, J.T. (2015) Wavelength selection of tidally reversing mega-ripples, field observations and comparison with numerical flow modeling. CSDMS Annual Meeting, Boulder, CO
- Nienhuis, J.H., Ashton, A.D., Giosan, L., Nardin, W., Fagherazzi, S. (2014) Sediment bypassing of river mouths: mechanisms and effects on delta evolution. AGU Fall Meeting, San Francisco, CA
- Nienhuis, J.H., Ashton, A.D., Giosan, L. (2014) Wave angle control on deltaic channel orientation. CSDMS Annual Meeting, Boulder, CO (*best poster award*)
- Nienhuis, J.H., Perron, J.T., Kao, J.C., Myrow, P. (2013) Fluid dynamical control of spacing and symmetry breaking in orbital wave ripples. AGU Fall Meeting, San Francisco, CA
- Ashton, A.D., Nienhuis, J.H., Ortiz, A.C., Lorenzo Trueba, J., Giosan, L. (2013) Left behind: effects of marine reworking and sea-level rise on deltas of the 21st century. AGU Fall Meeting, San Francisco, CA

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- Nienhuis, J.H., Ashton, A.D., Giosan, L. (2013) Terrestrial climate impacts on river deltas. GCC Conference, Woods Hole, MA.
- Nienhuis, J.H., Ashton, A.D., Giosan, L. (2013) Using numerical models to constrain the evolution of the Ebro Delta. RCEM, Santander, ES
- Nienhuis, J.H., Ashton, A.D., Giosan, L. (2013) Growth and Abandonment: Quantifying First-order Controls on Wave Influenced Deltas. CSDMS Annual Meeting, Boulder, CO (*invited*)
- Ashton, A.D., Nienhuis, J.H. (2012) On the hook of a Spit. AGU Fall Meeting, San Francisco, CA
- Nienhuis, J.H., Ashton, A.D., Giosan, L. (2012) Quantifying the transition from fluvial- to wave-dominance for river deltas with multiple active channels. AGU Fall Meeting, San Francisco, CA
- Ashton, A.D., Giosan, L., Nienhuis, J., Kettner, A., and Ibanez, C. (2011) Modeling the evolution of wave-dominated deltas: influence of wave angle distribution and sediment supply variation on plan-view morphologies, with application to the Ebro Delta, Spain. DeltaNet International Conference, Ebro Delta, ES.
- Hogeboom, H. J., T. Doldersum, J.H. Nienhuis, M. Siemerink, F. v. d. Werf, A. Zeekant (2010) 'Ritsen met water' How to manage the Meuse, International Meuse Conference, Liege, BE (*invited*)