Irina Overeem

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Education

2002	Ph.D. Civil Engineering and Applied Earth Sciences, Delft University of Technology, The Netherlands.
1996	M.Sc. Summa Cum Laude, Environmental Engineering, Specialization in 'Soil, Water and Atmosphere', Wageningen University, The Netherlands.
1993	B.Sc. Soil, Water and Atmosphere, Wageningen University, The Netherlands.

Professional Experience

2018 – present	Associate Professor, Department of Geological Sciences, University of Colorado at Boulder, USA.
2015 – present	Owner Consulting Company, Terradyna LLC, Boulder, USA.
2009- present	Fellow, INSTAAR, University of Colorado, Boulder, USA
2009 – 2018	Research Scientist III at Community Surface Dynamics Modeling System, INSTAAR, University of Colorado at Boulder, USA.
2007 – 2009	Research Scientist II at Community Surface Dynamics Modeling System, INSTAAR, University of Colorado at Boulder, USA.
2005 - 2007	Assistant Professor, Department of Geotechnology, Delft University of Technology, The Netherlands.
2002 - 2005	Research Scientist I and II, INSTAAR, University of Colorado at Boulder, USA.
1997 - 2001	Junior Researcher, Civil Engineering and Applied Earth Sciences, Delft University of Technology, The Netherlands.
1995	Engineering Trainee, Water Resources NGO, Hyderabad, India.
1994	Graduate Research Assistant Hydrogeology, University of Oslo, Norway.

Awards

- Science Communication Fellowship, University of Colorado, 2015.
- McNeill-Nott Award to promote women's alpine climbing, American Alpine Club, 2014.
- National Oceanographic Partnership Program Award 2010.
- Denali Pro Award, for an independent mountain rescue in Denali NP, Alaska, 2009.

- Graduate Student Fund for International Research, Delft University, The Netherlands, 1999.
- Outstanding Student Award, Vrijvrouwe van Renswoude, The Netherlands, 1996
- Wageningen University Fund Award, The Netherlands, 1994.
- Tropenfonds Award, Wageningen University, The Netherlands, 1994.

Publications

* Notes student authors.

Peer-Reviewed Papers **(H-index = 41, i10-index = 70)**

79 Eckland, A.*, **Overeem, I.,** Carlson, B., 2025. Flash floods sequester organic matter at drought-stricken Elephant Butte Reservoir, New Mexico, USA. *Water Resources Research*.

78 Li, D., Zhang, T., Walling, D., Lane, S., Bookhagen, B., Tian,S., **Overeem, I.,** Kettner, A., Syvitski, J., Park., E., Koppes, M., Schmitt, R., Sun, W., Ni, W., Ehlers, T., 2024. The competing controls of glaciers, precipitation, and vegetation on high-mountain fluvial sediment yields. *Science Advances* 10,48, DOI: 10.1126/sciadv.ads6196.

77 Pierce, E.*, **Overeem, I.,** Jouvet, G., 2024. Modeling Sediment Fluxes from Debris-Rich Basal Ice Layers. *Journal of Geophysical Research: Earth Surface*, 129, 10. https://doi.org/10.1029/2024JF007665

76 Zhu, Q., Xing, F., Wang, Y.P., Syvitski, J., **Overeem, I.,** Guo,J., Li,Y., Tang,J., Yu, Q., Gao, J., Gao, S., 2024. Hidden delta degradation due to intensified storms, *Science Advances*, May 2024. DOI: 10.1126/sciadv.adk1698

75 Gan,T., Tucker,G., Hutton, E., Piper, M., **Overeem, I.,** Kettner, A., Campforts, B., Moriarty, J., Undzis, B., Pierce, E., McCready, L., 2024. CSDMS Data Components: data-model integration tools for Earth surface processes modeling. *Geoscientific Model Development*, https://gmd.copernicus.org/articles/17/2165/2024/

74 Morris, M., Lehmann B., Campforts B., Brencher, G., Rick, B., Anderson, L., Handwerger, A., **Overeem, I.** and Moore, J., 2023. Alpine hillslope failure in the western US: Insights from the Chaos Canyon landslide, Rocky Mountain National Park USA. *ESurf*. https://doi.org/10.5194/egusphere-2023-697

73 Campforts, B., Shobe, C., Tucker, G., **Overeem, I.,** 2022. The art of landslides: How stochastic mass wasting shapes topography and influences landscape dynamics. *Journal of Geophysical Research: Earth Surface* 127 (8), e2022JF006745. https://doi.org/10.1029/2022JF006745

72 Hasholt B., Nielsen, T., Mankoff, K., Gkinis, V., **Overeem, I.,** 2022. Sediment concentration and transport in icebergs, Scoresby Sound, East Greenland. *Hydrological Processes* 36,10, e14668. https://doi.org/10.1002/hyp.14668

71 Zhang, T., Li D., East, A., Walling, D., Lane, S., **Overeem, I.,** Beylich, A., Koppes, M., Li, X. 2022. Warming-driven erosion and sediment transport in cold regions**.** *Nature Reviews – Earth and Environment. **3**, 832–851.* https://doi.org/10.1038/s43017-022-00362-0

70. **Overeem, I.**, Piliouras, A., Nienhuis, J., 2022. Arctic Deltas are 'ice-dominated', *Nature Reviews – Earth and Environment. 1-16. 10.1038/s43017-022-00268-x*

69. Tucker, G., Hutton, E., Piper, M., Campfort, B., Gan,T., Barnhart, K., Kettner, A., **Overeem I.**, Peckham S., McCready, L., 2022. CSDMS: a community platform for numerical modeling of earth surface processes. *Geoscientific Model Development*. 15, 1413–1439. 10.5194/gmd-15-1413-2022.

68. Syvitski, J., Restrepo-Angel, J., Saito, Y., **Overeem, I.**, Vorosmarthy, C., Wang, H., Olago, D., 2022, Earth's Sediment Cycle during the Anthropocene. *Nature Reviews – Earth and Environment **3**, 179–196.*

67. Li, D., Lu, X, **Overeem, I.**, Walling, D., Syvitski, J., Kettner, A.J., Bookhagen B., Zhou, Y., Zhang, T., 2021. Exceptional increases in fluvial sediment fluxes in a warmer and wetter High Mountain Asia. *Science, 10.1126/science.abi9649*

66. Passalacqua, P., Goodbred, S., Giosan, L., **Overeem, I.,** 2021. Stable ≠ Sustainable: Delta dynamics versus the human need for stability, *Earth's Future. 10.1029/2021EF002121*

65. Li, D., **Overeem, I.,** Kettner, A., Xixi, D. 2021. Air temperature regulates erodible landscape, water and sediment fluxes in the permafrost-dominated catchment on the Tibetan Plateau. *Water Resources Research. 10.1029/2020WR028193*

64. Leidman, S., Rennermalm, A., Muthyala, R., Guo, Q., **Overeem, I**. 2020. The Presence and Widespread Distribution of Dark Sediment in Greenland Ice Sheet Supraglacial Streams Implies Substantial Impact of Microbial Communities on Sediment Transport and Albedo. *Geophysical Research Letters*. *10.1029/2020GL088444*

63. Perignon, M., Adams, J.*, **Overeem, I.,** Passalacqua, P., 2020. Dominant process zones in a mixed fluvial-tidal delta are morphologically distinct. *eSurf, 10.5194/esurf-8-809-2020*

62. Jamison-Todd, S.*, Stein, N., **Overeem, I.,** Trower, L., Khalid, A., 2020. Hurricane Deposits on Carbonate Platforms: a case study of Hurricane Irma deposits on Little Ambergris Cay, Turks and Caicos Islands. *Journal of Geophysical Research. 10.1029/2020JF005597*

61. Wang, K.*, **Overeem, I.,** Jafarov, E., 2019. Sensitivity Evaluation of the Kudryavtsev Permafrost Model. *Science of the Total Environment. 10.1016/j.scitotenv.2020.137538*

60. Zheng, L.*, **Overeem, I.,** Wang, K., Clow, G., 2019. Changing Arctic River Dynamics Cause Localized Permafrost Thaw, *Journal of Geophysical Research – Earth Surface. 10.1029/2019JF005060*

59. Lintern, D.G., Blais-Stevens, A., Bobrowsky, P.T., Conway, K., Huntley, D., Mackillop, K., **Overeem, I.,** Shaw, J., Stacey, D.C., Hill, P.R., 2019. Providing Multidisciplinary Science Advice for Coastal Planning in Kitimat Arm, British Columbia. In: Lintern, D.G., Mosher, D.,Moscadeilli, L., ,Bobrowsky, P., Campbell, C., Chaytor, J., Clague, J., Georgiopoulou, A., Lajeuness, P., Normandeau, A., Piper, D., Scherwath, M., Stacey, C., Turmel, D., (eds.) Subaqueous Mass Movements and Their Consequences: Assessing Geohazards, Environmental Implications and Economic Significance of Subaqueous Landslides**.** Geological Society, London, Special Publications 477.

58. **Overeem, I.,** Briner, J.P., Kettner, A.J., Syvitski, J.P.M., 2019. High-Latitude Valley Fills: A case-study of Clyde fjordhead, Baffin Island, Arctic Canada. In: *SEPM Spec. Publ*., Latitudinal Controls on Stratigraphic Models and Sedimentary Concepts. p93-106. *10.2110/sepmsp.108.05*

57. Syvitski, J., Kettner, A.J., **Overeem, I.,** Brakenridge,G.R., Cohen,S., 2019. Latitudinal controls on Siliciclastic Sediment Production and Transport. In: *SEPM Spec. Publ*., Latitudinal Controls on Stratigraphic Models and Sedimentary Concepts. p14-28. *10.2110/sepmsp.108.04*

56. Moon, T., **Overeem, I.,** Druckenmiller, M., Holland, M., Huntington, H., Kling, G., Lovecraft, A.L., Miller, G., Scambos, T., Schaedel, C., Schuur, E., Trochim, E., Wiese, F., Williams, D., Wong, G., 2019. The expanding footprint of rapid Arctic Change. *Earth's Future. 10.1029/2018EF001088*

55. Bendixen, M.*, **Overeem, I.,** Rosing, M., Anker Bjørk, A., Kjær, K., Kroon, A., Zeitz, G., Lønsmann Iversen, L., 2019. Promises and perils of sand exploitation in Greenland. *Nature Sustainability* 2, *98–104. 10.1038/s41893-018-0218-6*

54. Wang, K.*, Jafarov, E., **Overeem, I.**, Romanovsky, V., Schaefer, K., Clow, G., Urban, F., Cable, W., Piper, M., Schwalm, C., Zhang, T., Kholodov, A., Sousanes, P., Loso, M., Swanson, D., Hill, K., 2018, A synthesis dataset of permafrost-affected soil thermal conditions for Alaska, USA, *Earth System Science Data, 10, 2311-2328*. *10.5194/essd-10-2311-2018*

53. **Overeem, I.,** Jafarov E., Wang, K.*, Schaefer K., Stewart S., Clow, G., Piper M., Elshorbany Y., 2018, A modeling toolbox for permafrost landscapes, *Eos, 99. 10.1029/2018EO105155*

52. Chen, Y., **Overeem, I.,** Kettner, A., Gao, S., Syvitski, J., Wang, Y., 2018. Quantifying sediment storage on the floodplains outside levees along the lower Yellow River during the years 1580-1849. *Earth Surface Processes and Landforms. 10.1002/esp.4519*

51. Kettner, A.J., Cohen, S., **Overeem, I.**, Fekete, B., Brakenridge, R., Syvitski, J., 2018. Increases in flood frequency by the 21st century: A global modeling assessment. In: Schuman, G, Bates, P, (eds.), *Global Flood Hazard: Applications in Modeling, Mapping, and Forecasting*. 2018 American Geophysical Union. *10.1002/9781119217886*

50. Higgins, S.*, **Overeem, I.,** Rogers, K., Kalina, E., 2018. River linking in India: Downstream impacts on water discharge and suspended sediment transport to deltas. *Elementa*, 6, 1:20. *10.1525/elementa.269*

49. Rogers K.G.*, **Overeem I.** 2017. Doomed to drown? Sediment dynamics in the human-controlled floodplains of the active Bengal Delta. *Elementa*. 5:65. *10.1525/elementa.250*

48. **Overeem, I.,** Hudson, B.*, Syvitski, J., Mikkelsen A., Hasholt, B., van der Broeke, M., Noel, B., Morlighem, M., 2017. Substantial export of suspended sediment to the global oceans from glacial erosion in Greenland. *Nature Geoscience* 10, 859–86. *10.1038/ngeo3046*

47. Bendixen, M.*, Lonsman-Iversen, L., Bjork, A., Elberling, B., Westergaard-Nielsen, A., **Overeem, I.,** Barnhart, K, Khan, S., Box, J., Abermann, J., Langley, K., Kroon, A., 2017. Delta Progradation in Greenland driven by glacial mass loss. *Nature* 55**,** 101–104. *10.1038/ngeo629*

46. Tessler, Z., Vorosmarthy, C., Syvitski, J., **Overeem, I.,** 2017. A model of water and sediment balance as determinants of relative sea-level rise in contemporary and future deltas.

Geomorphology. *10.1016/j.geomorph.2017.09.040*

45. Wang, K.*, Zhang, T., Zhang, X., Clow, G., Jafarov, E., Overeem, I., Romanovsky, V., 2017. Continuously Amplified Warming in the Alaskan Arctic: Implications for the Uncertainty in Estimating a Global Warming Hiatus. *Geophysical Research Letters* 44, 9029-9038. *10.1002/2017GL074232*

44. Brakenridge, G.R., Syvitski, J., Niebuhr, E., **Overeem, I.**, Kettner, A., Higgins, S.*, Prades, L., 2017. Design with nature: Causation and avoidance of catastrophic flooding, Myanmar. *Earth-Science Reviews*, *165, 81–109*. *10.1016/j.earscirev.2016.12.009*

43. Hudson, B*, **Overeem, I.,** Syvitski, J., 2016. A novel technique to detect turbid water and mask clouds in Greenland fjords. *International Journal of Remote Sensing 37,7, 1730-1746. 10.1080/01431161.2016.1157641*

42. Barnhart, K.*, Miller, C.R., **Overeem, I.**, Kay. J., 2015. Mapping the future expansion of Arctic open water. *Nature Climate Change*. 2 November 2015. *10.1038/nclimate2848*

41. **Overeem, I.**, Hudson, B.*, Welty, E., Mikkelsen, A.*, Pedersen, D., LeWinter, A., Hasholt, B., 2015. River Inundation Suggests Ice Sheet Runoff Variations, *Journal of Glaciology*, 61, 228, 776-788. *10.3189/2015jog15j012*

40. Chen, Y.*, **Overeem, I**., Kettner, A.J., Gao, S., Syvitski, J.P.M., 2015. Modeling Flood Dynamics along the Super-elevated Channel Belt of the Yellow River over the Last 3,000 years. *Journal of Geophysical Research,* 120, 7, 1321-1351. *10.1002/2015JF003556*

39. Barnhart, K.*, **Overeem, I.**, Anderson, R.S. 2014. The effect of changing sea ice on the physical vulnerability of Arctic coasts. *The Cryosphere* 8, 1777-1799. *10.5194/tc-8-1777-2014*

38. Higgins, S.*, **Overeem, I.,** Steckler, M., Syvitski, J., Seeber, L., Akhter, H. 2014. InSAR Measurements of Compaction and Subsidence in the Ganges-Brahmaputra Delta, Bangladesh. *Journal of Geophysical Research*, 119, 8, 1768-*1781. 10.1002/2014JF003117*

37. Hudson, B.*, **Overeem, I.**, McGrath, D., Syvitski, J., Mikkelsen, A. *, Hasholt, B., 2014. MODIS observed increase in duration and spatial extent of sediment plumes in Greenland fjords. *The Cryosphere*. 8, 1161-1176. *10.5194/tc-8-1161-2014*

36. Barnhart, K.*, Anderson, R., **Overeem, I.**, Wobus, C., Clow, G., Urban. F. 2014. Modeling erosion of ice-rich permafrost bluffs along the Alaskan Beaufort Sea coast. *Journal of Geophysical Research,* 119, 5, 1155-1179. *10.1002/2013JF002845*

35. Syvitski, J.P.M., Kettner, A.J., **Overeem, I**., Giosan, L., Brakenridge, R., Hannon, M.*, Bilham, R., 2013. The Anthropocene Metamorphis of the Indus Delta and Lower Floodplain. *The Anthropocene.* 3, 24-35. *10.1016/j.ancene.2014.02.003*

34. Higgins, S.*, **Overeem I.**, Tanaka, A., Syvitski, J.P.M., 2013. Land Subsidence at Aquaculture Facilities in the Yellow River Delta, China. *Geophysical Research Letters*. 40, 15, 3898-3902. *10.1002/grl.50758*

33. Brakenridge, G.R., Syvitski, J.P.M., **Overeem, I.**, Higgins, S.*, Kettner, A.J., Stewart-Moore, J.A.*, Westerhoff, R., 2013. Global Mapping of Storm Surges and the Assessment of Delta

Vulnerability. *Natural Hazards*. 66, 1295-1312. *10.1007/s11069-012-0317-z*

32. Matell, N.*, Anderson, R.S., **Overeem, I.**, Wobus, C., Urban, F.E., Clow, G.D., 2013. Modeling the subsurface thermal impact of Arctic thaw lakes in a warming climate. *Computers and Geosciences*, 53,69-79. *10.1016/j.cageo.2011.08.028*

31. Campbell, K., **Overeem, I**., Berlin, M.*, 2013. Taking it to the Streets: the Case for Modeling in the Geosciences Undergraduate Curriculum. *Computers and Geosciences,* 53, 123-128. *10.1016/j.cageo.2011.09.006*

30. **Overeem, I.**, Berlin, M.*, Syvitski, J.P.M., 2013. Strategies for Integrated Modeling: the Community Surface Dynamics Modeling System Example. *Environmental Modeling & Software*, 39, 314-321. *10.1016/j.envsoft.2012.01.012*

29. De Winter, I.*, Storms, J., **Overeem, I.**, 2012. Numerical modeling of glacial sediment production and transport during deglaciation. *Geomorphology* 167-168, 102-104. *10.1016/j.geomorph.2012.05.023*

28. Storms, J.E.A. de Winter, I.*, **Overeem, I.**, Drijkoningen, G.G., Bakker, M., Lykke-Andersen, H., 2012. The Holocene sedimentary history of the Kangerlussuaq Fjord-valley fill, West Greenland. *Quaternary Science Reviews*, 35, 29-50. *10.1016/j.quascirev.2011.12.014*

27. Syvitski, J.P.M., **Overeem, I.**, Brakenridge, R., Hannon, M.*, 2012. Floods, floodplains, delta plains — A satellite imaging approach. Review Article. *Sedimentary Geology*, 267–268, 1-14. *10.1016/j.sedgeo.2012.05.014*

26. Chen, Y.*, Syvitski, J.P.M., Gao, S., **Overeem, I.**, Kettner, A.J. 2012. Socio-economic Impacts on Flooding: a 4000 year History of the Yellow River, China. *AMBIO*, 41, 7, 682-689. *10.1007/s13280-012-0290-5*

25. **Overeem, I.,** Anderson, R.S., Wobus, C., Clow, G.D., Urban, F.E., Matell, N.*, 2011. Sea Ice Loss Enhances Wave Action at the Arctic Coast. *Geophysical Research Letters*, 38, L17503. *10.1029/2011GL048681*

24. **Overeem, I.**, Kettner, A.J., Syvitski, J.P.M. 2011. Management and human effects. In: Wohl, E., (ed.), 2011. Treatise of Geomorphology: Fluvial Geomorphology.

23. Wobus, C., R.S. Anderson, **I. Overeem**, N. Matell*, G. Clow, F. Urban, 2011. Thermal Erosion of a Permafrost Coastline: Improving Process-Based Models Using Time-Lapse Photography. *Journal of Arctic Antarctic and Alpine Research*, 43, 3, 474–484. *10.1657/1938-4246-43.3.474*

22. Chen, Y.*, **Overeem, I.**, Syvitski, J.P.M., Gao, S., Kettner, A.J. 2011. Controls of levee breaches on the Lower Yellow River during the years 1550-1855. *IAHS Publ River, Coastal and Estuarine Morphodynamics: RCEM 2011, Tsinghua University Press, Beijing, 617-633.*

21. Donselaar, R., Visser, C., **Overeem, I.**, 2011. Mapping of Fluvial Fairways in the Ten Boer Member, Southern Permian Basin. In: Grotsch, J., Gaupp, R., (eds.), 2011. Permian Rotliegend of the Netherlands. *SEPM Special Publ.* 98, 105-118. *10.2110/pec.11.98.0105*

20. **Overeem, I.**, Syvitski, J.P.M., 2010. Shifting Discharge Peaks in Arctic Rivers, 1977-2007, *Geografiska Annaler* 92, 285-296. *10.1111/j.1468-0459.2010.00395.x*

19. **Overeem, I.**, Syvitski, J.P.M., 2010. Experimental exploration of the stratigraphy of fjords fed by glaciofluvial systems, In: Howe, J., Austin, W., Forwick, M., Paetzel, M., 2010. Fjords Systems and Archives, *Geological Society Spec. Publ.* 344, 125-142.

18. McGrath, D.*, Steffen, K., **Overeem, I.**, Mernild, S., Hasholt, B., van den Broeke, M., 2010. Sediment plumes as a proxy for local ice sheet runoff in Kangerlussuaq Fjord, West Greenland. *Journal of Glaciology* (09J116). *10.3189/002214310794457227*

17. Syvitski, J.P.M., Kettner, A.J., **Overeem, I**., Hutton, E.W.H., Hannon, M. T.*, Brakenridge, G.R., Day, J., Vörösmarty, C., Saito, Y., Giosan, L., Nicholls, R.J., 2009. Sinking Deltas due to Human Activities. *Nature Geoscience* 2, 681 - 686. *10.1038/ngeo629*

16. **Overeem, I**., Syvitski, J.P.M., 2009. Dynamics and Vulnerability of Delta Systems. Land Ocean Interactions in the Coastal Zone - *LOICZ Reports and Studies* No. 35. Germany.

15. Donselaar, M.E., **Overeem, I.**, 2008. Connectivity of fluvial point-bar deposits: An example from the Miocene Huesca Fluvial Fan, Ebro Basin, Spain. *AAPG Bulletin* 92, 1109 – 1129. *10.1306/04180807079*

14. Hoogendoorn, R.M., **Overeem, I**., Storms, J.E.A., 2008. Process response modeling of fluvial deltaic systems, simulating evolution and stratigraphy on geological timescales. *Computers & Geosciences*, 34, 10, 1394-1416. *10.1016/j.cageo.2008.02.006*

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12. Fagherazzi, S., **Overeem I**., 2007. Models of deltaic and inner continental shelf evolution. *Annual Review of Earth and Planetary Science Reviews*, 35, 685-715. *10.1146/annurev.earth.35.031306.140128*

11. Briner, J.P., **Overeem, I.**, Miller, G., Finkel, R., 2007. The deglaciation of Clyde Inlet, northeastern Baffin Island, Arctic Canada. *Journal of Quaternary Science*, 22, 3, 223-232. *10.1002/jqs.1057*

10. Wong, T.E., de Lugt, I.R., Kuhlmann, G., **Overeem, I**., 2007. Tertiary. In: Wong, T.E., Batjs, D.A.J., de Jager, J., (eds.), 2007. *Geology of the Netherlands*. 151-171. Royal Netherlands Academy of Arts and Sciences.

9. Kraft, B.J., **Overeem, I.**, Holland, C.W., Pratson, L.F., Syvitski, J.P.M., Mayer, L.A., 2006. Stratigraphic Model Predictions of Geoacoustic Properties. *Journal of Ocean Engineering*. *10.1109/JOE.2006.875235*

8. Kroonenberg, S.B., Simmons, M. D., Alekseevski, N. I., Aliyeva E., Allen, M.B., Aybulatov, D.N., Baba-Zadeh, A., Badyukova, E.N, Hinds, D.J., Huseynov, D., Ibrahimov, B., Mamedov P., **Overeem I.**, Povalishnikova, E.N., Rusakov, G.V. †, Suleymanova, S., Svitoch A.A., 2005. Two deltas, two basins, one river, one sea; The modern Volga delta in the North Caspian Basin as an analogue of the Neogene Paleo-Volga delta, Productive Series, South Caspian Basin. *SEPM Spec Publ.*, 83. 'River Deltas: concepts, models and examples'. 231-256.

7. **Overeem, I.**, Syvitski, J.P.M., Hutton, E.W.H., 2005. Three-dimensional numerical modeling of deltas. *SEPM Spec. Publ.*, 83. 'River Deltas: concepts, models and examples'. 13-30.

6. **Overeem, I.**, Syvitski, J.P.M., Hutton, E.W.H., Kettner, A.J., 2005. Stratigraphic variability due to uncertainty in model boundary conditions: a case study of the New Jersey Shelf over the last 40,000 years. *Marine Geology*, 224, 23-41. *10.1016/j.margeo.2005.06.044*

5. **Overeem, I.**,Kroonenberg, S.B., Veldkamp, A., Groenesteijn, K., Rusakov, G. V.†, Svitoch, A.A., 2003. Small-scale stratigraphy in a large ramp delta: recent and Holocene sedimentation in the Volga delta, Caspian Sea. *Sedimentary Geology* 159, 133-157. *10.1016/S0037-0738(02)00256-7*

4. **Overeem, I.**, Veldkamp, A., Tebbens, L., Kroonenberg, S.B., 2003. Modelling Holocene stratigraphy and depocentre migration of the Volga delta due to Caspian Sea-level change. *Sedimentary Geology* 159, 159-175. *10.1016/S0037-0738(02)00257-9*

3. **Overeem, I.** 2002. *Process-response simulation of fluvio-deltaic stratigraphy*. Delft University of Technology Ph.D. thesis. ISBN 90 6464 859X.

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1. Steeghs, P., **Overeem, I.**, Tigrek, S.*, 2000. Seismic Volume Attribute Analysis of the Cenozoic Succession in the L08 Block (Southern North Sea). *Global and Planetary Change* 27, 245-262. *10.1016/S0921-8181(01)00069-8*

Pending Publications

1. **Overeem, I**., Wang.K., Repasch, M., Koch, J., in prep. Thawing Arctic River Basins: model suggests foothills regions are hotspots of sediment and carbon release, *ERL*.

2. Repasch, M., **Overeem, I**., Anderson, S., Anderson, R., Arcuri, J., Koch, J., Valy, G., in prep. Mobilization and downstream transformations of petrogenic and permafrost-derived organic carbon in Arctic river. *Geophysical Research Letters*.

3 Vowels, L., Armstrong, W., **Overeem, I**., McGrath, D., Rick, B., Dye, A., Martin, D., in revision 2024. Investigating changes in proglacial stream suspended sediment concentration and their drivers using large scale remote sensing. *Geomorphology*.

4 Li, D., **Overeem, I.,** submitted April 2024. Widespread increases in Arctic river suspended sediment concentrations by abrupt permafrost thaw and wildfires, *Nature Water*.

5 Undzis, B., Moriarty, J., Eidam, E., **Overeem, I.,** submitted August 2024. Open Water Sediment Dynamics on the Alaskan Beaufort Sea Shelf: A Numerical Modeling Study. *JGR-Oceans*.

6 Pierce, E., **Overeem, I.,** Hasholt, B., submitted 2025. Sediment Transport by Greenland's Icebergs. *Nature Geoscience*.

7 Pierce, E., **Overeem, I.,** Meyer, C., Rozmiarek, K., Markle B., Morris, V., Rempel, A., Nunn, R., in prep. 2025. Regelation and Sediment Entrainment at the base of GISP-2. *The Cryophere.*

Extended Abstracts, Reports and Published Contributions

31 Anderson, S., Cochran, C., Anderson, R.S., Repasch, M., Arcuri, J., **Overeem, I.,** 2024. A Carbon Budget for an Icy Riverine Landscape. Short Paper for International Conference on Permafrost, Whitehorse, Canada, June 2024.

30 Repasch, M., Arcuri, J., **Overeem, I.,** Anderson, S., Anderson, R.S., Cochran, C., Koch, J., 2024. Impacts of convective storms on runoff, erosion, and carbon export in a continuous permafrost landscape. Short Paper for International Conference on Permafrost, Whitehorse, Canada, June 2024.

29 Eckland, A.*, Foster., M., Hurst, A., **Overeem, I**., 2023. Multiple linear regression model-building to predict basin-sediment production rates and reservoir capacity loss across the United States. Extended abstract to SEDHYD Conference, Reno NV, May 2023.

28. **Overeem, I.,** 2020. Rivers Dynamics in Regions of Rapid Climate Change. Extended Abstract for Riverflow2020, 4p, *IAHS Special Publication*, July 4-8th, 2020, Delft, The Netherlands.

27. Adams, J.*, **Overeem, I.**, Hutton, E., Tucker, G., Kettner, A., 2019. Exploring Surface Processes Using the Community Surface Dynamics Modeling System Modeling Tools. *Extended Abstract SEDHYD* 2019, June 24th-28th, 2019, Reno, NV.

26. Kettner, A. J., **I. Overeem**, and G. Tucker, 2018. Can we build useful models of future risk from natural hazards? *Eos*, 99, *10.1029/2018EO105239*.

25. **Overeem, I.,** 2018. Greenland's growing deltas: Combining historical and modern imagery to decode change in a telltale Arctic landscape, *Earth Magazine*, February 2018.

24. Bendixen, M.*, Iversen, L., **Overeem, I.,** 2017. Greenland: built an economy on Sand. *Science* 358, 6365, 879. *10.1126/science.aar3388*.

23. Tedesco, M., Bell., R., Rennermalm, A., Hannah., E., Alexander, P., Briggs, K., MacFerrin, M., **Overeem, I.,** Koenig., L., 2016. Understanding the fundamental processes controlling the surface mass balance of the Greenland ice sheet and improving estimates, NASA Workshop Report, Lamont-Doherty, Sept 2016.

22. Kettner, A.J., Syvitski, J.P.M., **Overeem, I.,** Brakenridge, R., 2015. Morphological changes due to flooding: the Indus River. Short Paper for *RCEM* 2015, Iquitos, Peru, 4p.

21. Del Castillo, C, and writing team. 2015. Arctic – COLORS- Arctic-COastal Land Ocean inteRactionS Scoping Study Report for NASA, August 2015, 65p.

20. **Overeem, I.**, 2014. Arctic Permafrost Loss. *Earth Magazine*, April 2014. 24-31.

19. Hutton, E., Piper, M., **Overeem, I.**, Kettner, A.J., 2014 Building Sustainable Software, The

CSDMS approach. Working towards Sustainable Software for Science: Practice and Experiences, *WSSSPE2*, November 16, 2014, New Orleans, USA.

18. Syvitski, J.P.M., Hutton, E., Piper, M., **Overeem, I.**, Kettner, A.J., 2014. Plug and Play Component Modeling — The CSDMS2.0 Approach. *International Environmental Modelling and Software Society (iEMSs)*, Extended abstract for 7th International Congress on Environmental Modelling and Software, San Diego, California, USA.

17. **Overeem, I.**, Hudson, B.*, Mikkelsen, A., van der Broeke, M., Rennermalm, A. 2014. Response of Greenlandic Rivers to Ice Sheet Melt. Extended Abstract to the 44th International Arctic Workshop 15-16th of March, 2014.

16. Hudson, B.*, **Overeem, I.**, Syvitski, J., Mikkelsen, A., 2014. The Greenland Ice Sheet's Role In Setting River And Fjord Suspended Sediment Concentration: A Test Case From Two West Greenland Rivers. Extended Abstract to the 44th International Arctic Workshop 15-16th of March, 2014.

15. Eggerink, K.*, Hudson, B.*, Andrews, J., **Overeem, I**., 2014. A Pilot Study Of The Extent And Variations In Meltwater Plumes And Icebergs Emanating From Northeast Greenland Tidewater Glaciers. Extended Abstract to the 44th International Arctic Workshop 15-16th of March, 2014.

14. Barnhart, K.*, Anderson, R.S., **Overeem, I.**, 2014. The Effect of Changing Sea Ice On The Vulnerability Of Arctic Coast. Extended Abstract to the 44th International Arctic Workshop 15-16th of March, 2014.

13. Rogers, K.*, Syvitski, J., **Overeem, I.**, Higgins, S.*, 2013. Farming Practices and Anthropogenic Delta Dynamics. *IAHS* Extended Abstract, Gothenburg, Sweden, July 2013.

12. Foufoula-Georgiou, E., **Overeem, I.**, Saito, Y., et al., 2013. A vision for a coordinated international effort on delta sustainability. *IAHS* Extended Abstract, Gothenburg, Sweden, July 2013.

11. Berlin, M.*, **Overeem, I.**, McGrath, D.*, Rick, U., 2010. Regional Runoff Season Duration From Sediment Plume Analysis In The Kangerlussuaq Area, Greenland. Extended Abstract, 40th Arctic Workshop, Winterpark , CO, March 2010.

10. **Overeem, I.**, 2010. Arctic Coastal Erosion along the Beaufort Sea. Contribution to "A Science Plan for Regional Arctic System Modeling". In: Roberts et al., (eds.), 2010. A report by the Arctic Research Community for the National Science Foundation Office of Polar Programs.

9. **Overeem, I**, Syvitski, J.P.M., Kettner, A.J. 2008. Are Arctic Rivers Unique and Are They Changing? Extended Abstract, 38th Arctic Workshop, Boulder, Colorado, 5-7th of March 2008.

8. Perillo, G.M.E, Syvitski, J.P.M., Amos, C.L., Depetris, P., Milliman, J., Pejrup, M., Saito, Y., Snoussi, M., Wolanski, E., Zajaczkowski, M., Stallard, R., Hutton, E., Kettner, A., Meade, R., **Overeem, I.**, Peckham, S., 2007, Estuaries and their Sediments: How They Deal with Each Other. Inprint Newsletter of the IGBP/IHDP Land Ocean Interaction in the Coastal Zone 2007/3: 3-5.

7. De Winter, I.*, **Overeem, I.**, Storms, J.E.A., 2008. Sedimentary Architecture of a glacio-fluvial valley fill; West-Greenland Case-Study. Extended Abstract 38th Arctic Workshop, Boulder, Colorado, USA, 5-7th of March 2008.

6. **Overeem, I**., Briner, J.P., Kettner A.J., 2004. How dynamic are fluvial-deltaic systems draining land-ice? A case-study of Clyde River, Baffin Island. Extended Abstract 34th Annual Arctic

Workshop. March 11th-13th 2004, INSTAAR, University of Colorado at Boulder.

5. Kroonenberg, S.B., J.F. Boels, R.M. Hoogendoorn, **I. Overeem**, E. Aliyeva, D. Huseynov, E.M. Badyukova, A.A. Svitoch, D. Hinds, M.D. Simmons. 2004. Modern Caspian deltas as analogues for the productive series, Azerbaijan. Proc. AAPG Hedberg conference "Sandstone deposition in lacustrine environments: Implications for exploration and reservoir development", May 28-21, 2004, Baku, Azerbaijan, 44-48.
4. **Overeem, I.**, Kroonenberg, S.B., 2002. De Amazone in de Noordzee. *Natuur & Techniek*, Januari 2002.
3. **Overeem, I.**, Drijkoningen, G.G., Steeghs, T.P.H., van de Bilt, B.D.*, 2001. Modelling mass-movements along Cenozoic delta lobes, 3D seismic data analysis of the F09 block, North Sea, Extanded abstract, EAGE Amsterdam, The Netherlands, June 2001.
2. Van Spaendonck, R.L.C., Steeghs, T.P.H., **Overeem, I.**, Fernandes, F.C.A., Fokkema, J.T., 2001. Wavelet based volume attributes for seismic interpretation, Extanded abstract, EAGE Amsterdam, The Netherlands, June 2001.
1. **Overeem, I.** Weltje, G.J., van Dijke, J.J., Kroonenberg, S.B., 1999. Nested process response models of fluvio-deltaic sedimentation. *Proceedings of IAMG* 1999, Lippard, S.J., Sinding-Larsen (eds.), Trondheim, Norway, 6-11 August 1999.

Funded Research Projects

Active Awards ($1.4 million as PI, $14.7 million total)

8. Co-PI: Collaborative Research: RUI: Frontal ablation processes on lake-terminating glaciers and their role in glacier change, **NSF-OPP**, $337 to CU Boulder 2024-2027.
7. Co-PI: **MURI**, W911NF-22-S-0007. Synoptic measurement of stream and atmospheric indicators to improve the monitoring and prediction of climate-induced permafrost degradation across Alaska, $3 million, 2023-2028. PI: Dr. Merritt Turetsky.
6. Co-I: **NSF-Geoinformatics**. Collaborative Research: Facility: CSDMS: Engaging a thriving community of practice in Earth-surface dynamics. PI: Dr. Greg Tucker, $5,403,958, 2022-2027.
5. Co-I: **NASA**, Using NASADEM to understand feedbacks among landslides, topographic evolution, and sediment dynamics across tectonic and climatic regime. PI: Dr. Greg Tucker $450k 2022-2025.
4. Co-PI: **NSF-CSSI**: Collaborative Research: Frameworks: OpenEarthscape—Transformative Cyberinfrastructure for Modeling and Simulation in the Earth-Surface Science Communities, PI: Dr. Greg Tucker, $3.5 million, 2021-2025.
3. Co-PI: **NSF MG&G**: Collaborative Research: Biologically-driven island-building during sea-level rise and its implications for promoting resilient coastlines, PI: Dr. Elizabeth Trower . $465k, 2021-2025.
2. PI: **NSF-OPP-ANS**: Icy landscapes from the Brooks Range to the Beaufort Sea: Quantifying the mobilization, transport and deposition of sediment and carbon in Arctic Alaska, Co-PIs: Dr. R. S. Anderson, Dr. S. Anderson, $1.3million, 2020-2025.
1. Co-PI: **NSF-OPP**: Collaborative Research: Climate controls on carbon accumulation in upland permafrost at millennial scales, PI: Dr. Darell Kaufman, Co-PI: Dr. Ted Schuur, University of

Arizona, $51k to CU, 2020-2024.

Past Awards ($3.7 million as a PI, $9 million total)

25 PI: **NSF-EAR-GLD RAPID**: The effects of extreme drought on sediment transport and deposition in water-supply reservoirs, $50k, 2021-2022.

24 Collaborator: **MOE Singapore**: Riverine Sediment Load Response to Climate Change in High Mountain Asia, PI: Prof. Xixi Lu, $535k (not to CU), 2021-2023.

23 PI: **Worldbank - Bangladesh Water Development Board**. Long Term Monitoring, Research and Analysis of Bangladesh Coastal Zone (Sustainable Polders Adapted to Coastal Dynamics), Joint Venture of Danish Hydraulics Institute and Deltares, The Netherlands. $590, 2018-2022.

22 Co-PI: **NSF-GeoInformatics:** Community Facility Support: The Community Surface Dynamics Modeling System (CSDMS), PI: Dr. Greg Tucker. $3.6 million, 2018-2022.

21 PI: **NSF-CISE Cybertraining**: Pilot: Collaborative Research: Cybertraining for Earth Surface Processes Modelers, Co-PIs: Dr. Nicole Gasparini, Tulane University, Dr. Leilani Arthurs, $277k, 2019-2022.

20 PI: **CU Research and Innovation Seed Grant**: Fertilizing the North Atlantic Ocean; how Greenland's Icebergs Raft Sediments into the Ocean, Co-PI: Dr. Tom Marchitto. $50k, 2018-2022.

19. Co-PI: **NSF-PREEVENTS:** A transdisciplinary approach to next-gen natural hazard modeling: Improving accuracy and usability of earth surface process models for pre-event risk assessment**,** PI: Dr. Albert Kettner. $50k to CU, 2018-2019.

18. PI: **NSF-Coastal SEES:** Collaborative Research: Multi-scale modeling and observations of landscape dynamics, mass balance, and network connectivity for a sustainable Ganges-Brahmaputra delta". PI: Dr. Steve Goodbred, Vanderbilt University. $398k to CU, 2016-2021.

17. PI: **NCED-NSF PDF Fellowship program:** "Predicting the future of highly regulated deltas: a case-study of the Colorado River" $100k, 2016-2018.

16. PI: **NSF-Polar Cyberinfrastructure:** "Towards a Tiered Permafrost Modeling Cyberinfrastructure", Co-PI: Dr. Kevin Schaefer, $900k, 2015-2018.

15. PI: **NSF-ICER/Belmont Forum-G8**: "Collaborative Research: DELTAS: Catalyzing action towards sustainability of deltaic systems with an integrated modeling framework for risk assessment", PI: Dr. Efi Foufoula-Georgiou, University of Minnesota, $185k to CU, 2013-2016.

14. Co-PI: **NSF-EAR:** "Impacts of Vegetation and Climate Change on Dryland Rivers: Lessons from the Rio Puerco, New Mexico", PI: Dr. Greg Tucker. $300k, 2013-2016.

13. Co-PI: **NASA-Hydrology** "Quantifying Accelerating Change in Arctic Ocean River Discharge Using Coupled Satellite- and Ground-based Measurements, 2002-Present", PI: Dr. Bob Brakenridge. $195k, 2012-2014.

12. PI: **NSF-EAR** "Modeling Floodplain Dynamics: Can the Ganges-Brahmaputra Delta keep up with 21st Century Sea Level Rise?", $315k, 2011-2014.

11. PI: **ConocoPhillips** "Modeling and Exploring Floodplain Architecture", $85k to CU Foundation, 2010-2013.

10. PI: **NSF-OPP** “Greenlandic River Plumes as an Indicator of Ice Sheet Melt”, $358k, 2009-2014.
9. Co-PI: **Office of Naval Research** “Integration of Process Models to Predict Arctic Coastal Erosion”, $40k, PI: Dr. R.S. Anderson, University of Colorado, 2010-2011.
8. PI and Co-PI: **ConocoPhillips** “Uniqueness of Arctic Sedimentary Systems”, PI for year 1: Dr. J. Syvitski, $150k to CU Foundation, 2007-2009.
7. Co-PI: **National Oceanographic Partnership Program (ONR/NSF)** “Towards a predictive model for Arctic Coastal Erosion, Beaufort Sea, AK”, PI: Dr. R.S. Anderson, University of Colorado, $577k, 2007-2010.
6. PI: **IPY-Dutch Science Foundation** “Sediment supply to the Arctic coastal zone”, 235k EURO to Delft University, 2008-2012.
5. Co-PI: **Shell,** “Reservoir Geology of Ten Boer Claystone, North Sea Basin”, PI: Dr. R. Donselaar, 25k EURO to Delft University, 2006-2008.
4. PI: **NSF-OS** “Modeling sediment delivery and related stratigraphy in a tidal dominated delta, the Fly River, Papua New Guinea”, Co-PI: Dr. Sergio Fagherazzi, Boston University, $69k, 2003-2005.
3. Co-PI: **NSF EAR** “Modeling the sediment flux of the Ganges-Brahmaputra River”, PI: Dr. Steve Goodbred, Vanderbilt University, $25k, 2006.
2. PI: **NSF-OPP** “Channel switching in fluvio-deltaic systems draining land-ice”, $62k, 2004-2005.
1. PDF and Co-PI: **Office of Naval Research** “Modeling seabed variability and its influence on acoustic prediction uncertainty”, PI: Dr. Jaia Syvitski, $120k, 2002-2005.

Pending/Current Year Declined Proposals

1 PI: **CU Research and Innovation Seed Grant.** The Role of Dirty Ice: Informing Geoengineering Concepts to Slow Glacier Flow, $58k, Submitted January 2025.

2 PI: **NASA FINESST** graduate student J.Reahl. Monitoring lake-terminating glacier dynamics using NASA SWOT wide-swath radar altimetry, $150k, submitted December 2024.

3 Co-PI: **MURI**: Erosion of Coastal Arctic Permafrost and its Impact on Offshore Conditions. Submitted August 2024, $7.5 million.

4 PI: **NASA.** Quantifying Discharge in Ice-Dominated Arctic Deltas Using SWOT. $920k, declined June 2024.

5 Co-PI: **CU Research and Innovation New Frontiers Grant.** Incentivizing Carbon-Emission Elimination Endeavors (ICE^3), $50k, declined June 2024.

Teaching

2025 Field Methods in Earth Surface Processes, 4725, 2 credits, 12 students.

2024	Geomorphology Seminar, GEOL 5702, 1 credit, 7 students.
2024	Python Programming in Earth Sciences, 3600/5700, 3 credits, 25 students.
2024	Earth Surface Processes Modeling Summer Institute, 8 days, 26 students.
2024	Field Methods in Earth Surface Processes, 4725, 2 credits, 13 students.
2024	The Cryosphere-Earth's Icy Environments, 3000, 3 credits, 25 students.
2023	Python Programming in Earth Sciences, 3600/5700, 3 credits, 24 students.
2023	Earth Surface Processes Modeling Summer Institute, 8 days, 25 students.
2022	CSDMS Spring School Earth Surface Processes Modeling, 8 days, 25 students.
2022	Field Methods in Earth Surface Processes, 4725, 2 credits, 10 students.
2022	Exploring Earth, GEOL 1010, 3 credits, 169 students.
2021	Geomorphology Seminar, GEOL 5702, 1 credit, 5 students.
2021	Sedimentary Systems Modeling, GEOL 4700/5700_023, 3 credits, 14 students.
2021	Field Methods in Sedimentology, GEOL 4723, 2 credits, 10 students.
2021	Geomorphology Seminar, GEOL 5702, 1 credit, 5 students.
2021	Field Methods in Earth Surface Processes, 4725, 2 credits, 10 students.
2021	Earth Surface Processes Modeling Summer Institute, 8 days, 29 students.
2020	Sedimentary Systems Modeling, GEOL 4700/5700_023, 3 credits, 6 students.
2020	Exploring Earth, GEOL 1010, 3 credits, 167 students.
2020	Geomorphology Seminar, GEOL 5702, 1 credit, 5 students.
2020	Earth Surface Processes Modeling Summer Institute, 6 days, 27 students.
2019	Sedimentary Systems Modeling, 4700/5700, 3 credits, 12 students.
2019	Permafrost Hackathon, 4 days intensive numerical modeling clinic, 8 participants.
2018	Exploring Earth, GEOL 1010, 3 credits, 167 students.
2016/2017	Short Course on 'River and Coastal System Modeling', >35 students and postdoctoral fellows, NCED, University of Minnesota.
2015	Short Course on 'Numerical Modeling of River Basins and Coastal Systems', 40 students and postdoctoral fellows, NCED, Tulane University.
2014	Short Course (4 days) on 'Numerical Modeling of River Basins and Coastal Systems', 15 students, Nanjing University of Technology, China.
2014	Instructor in 10 days Fieldschool on 'Sedimentary Geology and Tectonic Processes of the Ganges-Brahmaputra River System', 32 students, Bangladeshi and US nationals.
2010 – present	Annual clinics on 'Using Coupled Models in Earth Surface Dynamics' at CSDMS Annual Meetings for upto 100 participants, clinics on the Regional Ocean Modeling

	System, TOPOFLOW, Permafrost Modeling. Development of online course material.
2010	'Surface Processes Modeling', 2 credits, 5000-level lectures and labs, course joint between Department of Geology and Geography, University of Colorado.
2011 – 2014	Hands-on course on 'Modeling Surface Processes' in NCED, University of Minnesota.
2006 – 2008	Reservoir Engineering M.Sc. course 'Geological Modeling', 2 credits, Delft University.
2005 – 2007	M.Sc. Field course in Spain, 'Reservoir Architecture', 4 credits, Delft University.
1998 – 2001	Teaching Assistant 'Reservoir Geological Fieldwork', 4 credits, Delft University.

Advising

Active Students Projects

Primary Advisor

- Reahl, J., 2024 – present, Ph.D., Department of Geological Sciences.
- Arcuri, J. 2021– present, Ph.D., Department of Geological Sciences.
- Rozmiarek, K., 2020 – present, Ph.D., primary academic advisor, co-advised with Dr. Tyler Jones, Department of Geological Sciences.

Committee Member

- Martin, J., 2023-present. Ph.D., Department of Geological Sciences, Committee member.
- Hibner, B. 2022-present. Ph.D., Department of Geological Sciences, Committee member.
- Undzis, B., 2021-present, Ph.D., Department of Atmospheric and Ocean Sciences, Committee member.
- Geller, T., Ph.D., 2021-present Department of Atmospheric and Ocean Sciences, Committee member.
- Gabel, V. 2019- present, Ph.D., Department of Geological Sciences, Committee member.

External Committee Member

- McCall, A., 2024-present. Water and Biogeochemical Fluxes in the Mackenzie Delta, Canada, Alfred Wegener Institute, Germany, PhD committee.

Completed Students Projects

Primary Advisor

(5 Ph.D., 4 M.Sc., 2 B.Sc. Honors theses)

- Eckland, A. 2024. Reservoir Sedimentation and Delta Dynamics Across Scales. Ph.D. thesis between INSTAAR and Department of Geological Sciences, University of Colorado.
- Pierce, E. 2024. From bedrock to bergs: sediment entrainment beneath glaciers and icesheets. Ph.D. thesis between INSTAAR and Department of Geological Sciences, University of Colorado.
- Tanguma, N., 2023. Validating Turbidity Retrieval Algorithms and Investigating Their Relation to Colored Dissolved Organic Material and Chlorophyll Concentrations in the Stikine River Delta. B.Sc. Honors Thesis, Department of Geological Sciences, University of Colorado.
- Zheng, L., 2019. Modeling the Impact of Floodplain Inundation on Permafrost Thermal State. Joint Ph.D. project between Wuhan University, China, and INSTAAR, University of Colorado.
- Hudson, B., 2014. Towards Understanding the Flux of Freshwater and Sediment from the Greenland Ice Sheet to the Coastal Ocean with MODIS, Primary Advisor, co-advised by J. Syvitski. Joint Ph.D. project between INSTAAR and Department of Geological Sciences, University of Colorado.
- Higgins, S., 2014. Anisotropic Delta Subsidence Measured with Interferometric Synthetic Aperture Radar (InSAR). Primary Advisor, co-advised by J. Syvitski. Joint Ph.D. project between INSTAAR and Department of Geological Sciences, University of Colorado.
- De Winter, I. 2008. Modeling 3D Sedimentary Architecture of Glacio-Fluvial Valley Fills. Primary Advisor, M.Sc. Delft University of Technology.
- Eikelenboom. 2008. Vertical Sorting in Outcrop Bedforms. Primary Advisor, B.Sc. Honors Thesis, Delft University of Technology.
- Sheombarsing, N.R., 2006. Modeling Sediment Storage in a Tidal-Dominated Delta, the Fly River, Papua New Guinea. Primary Advisor, M.Sc., Delft University of Technology.
- Van Der Bilt, B. D., 2000. The architectural evolution of Late Cenozoic delta lobes in the F09 Block, North Sea. Primary Advisor, M.Sc., Free University of Amsterdam.
- Van Amstel, W., 1999 Process-response modelling of delta slopes. Primary Advisor, M.Sc., Delft University of Technology.

Co-Advisor

(2 Ph.D., 6 M.Sc., 2 B.Sc. Honors thesis)

- Barnhart, K., 2015. Erosion of icy coastlines in the face of changing sea ice. Co-supervision with R.S. Anderson. Joint Ph.D. project between INSTAAR and Department of Geological Sciences, University of Colorado.
- Hossain, A. 2013. Assessing Morphological Changes due to Hydrometeorologic Influences in Mehendiganj Island, Meghna Estuary, Bangladesh. M.Sc., Faculty of Earth and Environmental Sciences, University of Dhaka, Bangladesh joint with University of Colorado, Boulder.
- Chen, Y., 2013. Application of numerical models to the study of the formation of the Holocene stratigraphy over the Bohai and Yellow Seas, in response to sediment input from the Yellow

River. Joint Ph.D. project between INSTAAR, University of Colorado and Nanjing University, China.

- McGrath, D., 2009. Sediment Plumes in Kangerlussuaq, West Greenland, as a proxy for runoff from the Greenland Ice Sheet. Co-supervisor with K. Steffen. M.Sc., Department of Geography, University of Colorado.
- Matell, N., 2009. Shoreline erosion and thermal impact of thaw lakes in a warming landscape, Arctic Coastal Plain, Alaska. Co-supervisor with R.S. Anderson. M.Sc., Department of Geology, University of Colorado.
- Holmes, C., 2009. Focused Temporal and Spatial Study on Sea Ice Location in the Beaufort Sea, Alaska, and its Role in Coastal Erosion. Co-supervisor with R.S. Anderson. B.Sc. Honors Thesis. Department of Geology, University of Colorado.
- Reichwein, J.H.C. 2008. Reservoir potential of the Ten Boer Claystone Member (ROCLT) in the Southern Permian Basin. M.Sc., Delft University of Technology, Co-supervisor with M.E. Donselaar.
- Ernens, F. 2006. The quantitative geometry of deposited sand bodies and the preservation potential of point bars in the Irtysh River System. B.Sc. Honors Thesis, Delft University of Technology. Co-supervisor with S. Luthi.
- Alfaro, E.M., 2006. Modelling of planimetric/historical changes of the Geul river (The Netherlands). M.Sc. Thesis Civil Engineering, Delft University of Technology. Co-supervisor with A. Crosato.
- Tigrek, S., 1998. 3D seismic interpretation and attribute analysis of the L08 block, Southern North Sea Basin, M.Sc. Thesis, Delft University of Technology. Co-supervised with G. Drijkoningen.

Committee Member

- Gabel, V. 2025. Evolution of Mixed Bedrock-Alluvial Rivers and Applications to Neogene Landscape Evolution the High Plains, Colorado, USA. Department of Geological Sciences, Committee Chair.
- Leidman, S., 2024. Meltwater and Sediment Transport Processes on the Greenland Ice Sheet. Rutgers University, NJ, Ph.D. External Member.
- Cochran, C., 2024. Floodplain carbon storage: soil organic carbon, surface age, and vegetation in an icy river corridor. MSc. Department of Geological Sciences, Committee Chair.
- Tasich, C. 2023. The Stable Equilibrium of the Ganges-Brahmaputra-Meghna Delta: Balancing Elevation with Changes in Sea Level, Land Subsidence, Tides, and Fluvial Sediment Supply, Ph.D., VanderBilt University, External Member.
- Hansen, J., 2023. Detecting Land Elevation Change in the Polar regions using High-Resolution Remote-sensing Techniques. Department of Geological Sciences, Committee Chair.
- Akter, J., 2022. Modelling Centuries of Geomorphological Development of the Ganges-Brahmaputra-Meghna Delta. Ph.D., Delft University of Technology, The Netherlands, External Member.

- Elsworth, G., 2022. The Impact of Internal Climate Variability on Marine Phytoplankton in a Warming Climate. Ph.D., Department of Geological Sciences, Committee Chair.
- Woods, C., 2022. Sentinel-1A/B flood inundation mapping of Hurricane Harvey in Texas and DInSAR time series analysis to map subsidence of the Ganges-Brahmaputra-Meghna Delta, M.Sc., Department of Geological Sciences. Committee Chair.
- Hurst, A., 2021. Bedrock River Erosion by Plucking. Ph.D., University of Colorado. Committee Member.
- Wild, A., 2021. Morphodynamics of a Bedrock Confined Estuary and Delta: The Skeena Estuary, Department of Geography, M.Sc., University of Victoria, Canada. External Committee Member.
- Lanagan, K., 2021. Impact of soil water content on active layer dynamics in the Gates of the Arctic National Park and Preserve, Alaska. M.Sc., University of Colorado. Committee Chair.
- Jamieson-Todd, S., 2019. Hurricane deposits on Carbonate Platform Islands. B.Sc. Honors Thesis, Department of Geological Sciences, University of Colorado, Committee Member.
- Yejim Lin, 2018. Response of Arctic Delta and River Dynamics to Climate Change. Ph.D. Qualifying Exam, UT Austin, TX, External Member.
- Hannon, M., 2011. Exploring Predictive Relationships of Fluvial Morphology: Using Shuttle Radar Topography Mission Data. M.Sc., Department of Geological Sciences, University of Colorado, Committee Member.
- Bron, A.W. 2006. Sediment mass balance study of the Late-Holocene prodelta on the Northern Adriatic Shelf, M.Sc., Delft University of Technology. Committee Member.

Advised Postdoctoral Fellows

Current

- Morey, S., 2023-present. (co-advised with Prof. G. Tucker)
- Gan, T., 2020-present. (co-advised with Prof. G. Tucker)

Past

- Repasch, M., 2022-2024, now Assistant Professor at University of New Mexico, NM.
- Campforts, B., 2020-2022, now Assistant Professor at Amsterdam Free University, The Netherlands.
- Carlson, B., 2021 – 2022, now Assistant Professor at Houston University, TX.
- Bendixen, M, 2018-2021, now Assistant Professor at McGill, Montreal, Canada.
- Adams, J., 2017-2019, now Assistant Professor at Delgado College, New Orleans, LA.
- Wang, K., 2016-2019, now Assistant Professor at East China Normal University, China.
- Perignon, M. 2015-2017, now Analytics Lead at Arity, Chicago, IL.
- Higgins, S., 2014-2016, now at SciTech Inc, Boulder, CO.
- Rogers, K., 2012-2014, now Assistant Professor Interdisciplinary Coastal Studies Institute, NC.

- Berlin, M., 2012, now Instructor Colorado Community Colleges Online, Boulder, CO.

Undergraduate Student Research Experience Offered

- Emma Marble, 2024-2025. Help with Greenland fjord sediment sample analysis, filtering, organic matter content analysis by LOI, grain-size analysis with Malvern and Camsizer techniques. Department of Geological Sciences, University of Colorado.
- Desiree Dsouza, 2023 – 2024. Help with sample preparation, mineralogical description, determination of provenance of boulder and gravel samples from Beaufort Coast Alaska. Department of Geological Sciences, University of Colorado.
- Joshua Kurtz, 2022-2023. Help with laboratory preparation of organic carbon and cosmogenic exposure dating samples for Icy Landscapes. Department of Geological Sciences, University of Colorado.
- Fardeen Qasemi, 2022-2023. Worked on remote-sensing data analysis of riverbank migration in the main stem Canning River. Department of Geological Sciences, University of Colorado.
- Rita Sherwood, 2019-2020, Greenland discharge and sediment data analysis: coding and laboratory sediment sample analysis. Department of Environmental Sciences, University of Colorado.
- Montek Singh, 2017-2018. Permafrost thaw lake model refactoring into Python, Department of Computer Sciences, University of Colorado.
- Byongsuk Chun, 2016-2017, Time-lapse camera data analysis of bank erosion in Meghna estuary, Bangladesh. Department of Geological Sciences, University of Colorado.
- Jason Cyrus, 2016. Performance Testing of the Permafrost Control Volume Model, Department of Computer Sciences, University of Colorado.
- Jose Silvestre, 2016. Modeling of Sediment loads of Indian rivers. Undergraduate student at UT San Antonio, hosted at INSTAAR University of Colorado through UNAVCO RESESS.
- Kenneth Eggerink, 2013-2014. Remote-sensing data analysis of suspended sediment, East Greenland, Department of Geological Sciences, University of Colorado.
- Aaron Zettler-Mann, 2014, Field data collection and gauging stations installation, West-Greenland. Department of Geological Sciences, University of Colorado.

Professional Development related to Teaching

2024	Cyber Training on AI-driven Analytics for Next Generation Arctic Scientists, 5 day short course, October 2024.
2023	Snow mobile safety and operation, fieldwork preparation training 1 day, February 2023.
2022	GEODES workshop on Diversity in Swiss Geosciences, November 2022.
2021	Wilderness First Aid, 2 days, July 2021
2021	AGU Bridge Training: Avoiding bias in graduate student admission practices, 1 day, February 2021.

2020	Risk Management for Field Teams, 1.5 day Workshop, University of Colorado
2019	Faculty Teaching Excellence Program, University of Colorado 1) Designing clicker questions for effective student engagement. 2) Short Course: Teaching in a Nutshell: strategies to enhance student learning.
2018	Faculty Teaching Excellence Program, University of Colorado 1) Authority, leadership, and practical action in tense moments – Maintaining your balance in the classroom. 2) Aligning course assignments with learning goals. 3) Introduction to CANVAS course. 4) Quizzes in CANVAS course
2005	'Learn to Teach', semester long hands-on 2 credits course on pedagogy, presentation, and teaching activities design at Delft University of Technology, NL.

Presentations (Only first-authored are listed)

110. Overeem, I., Arcuri, J., Repasch, M., Anderson, S., Anderson, R., Kock, J., Urban, F., 2024. Impacts of Thermal Conditions on Sediment Transport in Arctic Rivers, AGU Annual Meeting, Washington DC, December 2024.
109. Overeem, I., 2024. Permafrost in the Rocky Mountains: was permafrost degradation a factor in the 2022 Chaos Canyon Landslide? University of Colorado Mountain Research Station Seminar Series. June 22nd, 2024.
108. **INVITED:** Overeem, I., Tzortiou, M., Mannino, A., 2024. Arctic-Colors – Science design for a land-ocean biogeochemical interactions mission in Arctic Alaska, NASA ABOVE Meeting Boulder, CO, May 21-23th, 2024.
107. Overeem, I., Pierce, E., 2024. Machine learning and modeling to predict permafrost thaw, 2-day MURI ARO Meeting, Boulder, CO, May 8-9 2024.
106. Overeem, I., Arcuri, J., Repasch, M., Anderson, R., Anderson, S., Koch, J., Urban, F., Cochran, C. 2024. Icy landscapes: modeling river sediment transport, CSDMS Annual Meeting, Montclair, NJ, May 13-17, 2024.
105. **INVITED:** Overeem, I., 2023. CSDMS Overview, capabilities, and opportunities. CLaSH Cascading Hazards Modeling Workshop, Boulder, CO, October 2023.
104. **INVITED:** Overeem, I., 2023. CSDMS: The Earth Surface Processes Modeling Institute, online, Collaborative Center for Landslide Geohazards Workshop, June 2023.
103. **INVITED:** Overeem, I., 2023. Icy Landscapes - how ice influences sedimentary processes. CalTech Division of Planetary and Geological Sciences Seminar, CalTech, Pasadena, CA, May 2023.
102. Overeem, I., 2022. Sediment Entrainment and Transport in Basal Ice, University of Grenoble, France, December 2022.
101. **INVITED:** Overeem, I., 2022. Icy Landscapes - how ice influences sedimentary processes. VAW

Seminar, ETH-Zurich, Switzerland, November 2022.

100. Overeem, I., 2022. Icy Landscapes - how ice influences sedimentary processes. IDYST Seminar, University of Lausanne, Switzerland, October 2022.

99. Overeem, I., Pierce, E., 2022. Sediment Transport in Greenland's Icebergs. 1st Annual Glaciologists Meeting Colorado, Golden, April 2022.

98. **INVITED:** Overeem, I., 2022. Opening Pandora's Freezer: Arctic Landscapes Warming Up Seminar University of Northern Colorado, February 2022.

97. **INVITED**: Overeem, I., 2021. Arctic Deltas are Ice-dominated: development of a quantitative descriptor of ice as a process control. AGU Fall Meeting, New Orleans, December 12-17th, 2021.

96. **INVITED** (online): Overeem, I., 2021. Icy Landscapes Heating Up. Los Alamos National Lab, HighLats group, April 20th, 2021.

95. **INVITED** (online): Overeem, I., 2021. Icy Landscapes Heating Up. AGU-EPSP section seminar, March 16th.

94. **INVITED** (online): Overeem, I., 2021. Community, computing, and education: an overview of the Community Surface Dynamics Modeling System (CSDMS), National Academy of Science and Engineering, Meeting on Quantitative Training for Solid Earth Geophysics, February 4th

93. Overeem, I., Pierce, E., Hasholt, B., Marchitto, T., Hansen, J., Rennermalm, A. 2020. Greenland Icebergs as a source of sediment and micronutrients to the ocean domain, AGU 2020, online conference, December 5-18th.

92. **INVITED** TALK (online): Overeem, I., 2020. Greenland's Sediment Flux: filling a white spot on the global sediment flux map. Source to Sink Seminar Series, September 2, 2020.

91. **INVITED** KEYNOTE ADDRESS (online): Overeem, I., 2020. Rivers Dynamics in Regions of Rapid Climate Change. Extended Abstract for Riverflow2020, IAHR Delft, The Netherlands, July 7-10th.

90. **INVITED**: Overeem, I., 2020. Dynamic Arctic Coasts: process controls in a thawing environment. UNC Chapel Hill seminar, February 7th

89. **INVITED**: Overeem, I., 2019. Big Unknowns in Sediment Transport Processes in the Ganges-Brahmaputra Delta. Hydrological Sciences Seminar, University of Colorado, October 2019.

88. Overeem, I., Bendixen , M., Rosing, M., 2019. Sand Resources are Running Out, Except in Greenland. Arctic Futures 2050, Washington DC, September 6-8th, 2019.

87. Overeem, I., 2019. The Melting Greenland Ice Sheet and its Sediment Flux. IARPC, Washington DC, August 19th, 2019.

86. Overeem, I., 2019. Exploring Interactions of Surface Processes and Permafrost Controls with a Toolkit of Component Models, IARPC, Washington DC, June 11th, 2019.

85. Overeem, I., Zheng, L, Wang, K., 2019. Changing River Dynamics Cause Permafrost Thaw. May 23-27th, CSDMS Annual Meeting, May 2019.

84. Overeem, I., 2019. Changing Sedimentary Systems: modeling and predicting delta evolution. Department of Geological Sciences Advisory Board Meeting, Boulder, C, April 2019.

83. **INVITED**: Overeem, I., 2019. Changing River Dynamics Cause Permafrost Thaw: exploration from the coupling of a river temperature and a permafrost model. February 18th, 2019. Center for Water Earth Science, and Technology Seminar Series, University of Colorado.

82. Overeem, I., Goodbred, S., Steckler, M., 2019. Sedimentation Dynamics and Subsidence in the Ganges-Brahmaputra Delta System. Bangladesh Water Development Board and Ministry of Water Resources Inception Workshop on Longterm Monitoring, Research and Analysis of the Bangladesh Coastal Zone, Dhaka, Bangladesh, January 9th, 2019.

81. Overeem, I., Piper, Harris, C., M., Hutton, E., Kettner, A., 2018. Teaching with Numerical Models in the Earth Surface Processes, AGU Annual Meeting, Washington DC, Dec 9-14, 2018.

80. **INVITED**: Overeem, I., Zheng, L., Clow, G., Wang, K., 2018. How Changing Fluvio-deltaic Systems Affect Permafrost, AGU Annual Meeting, Washington DC, Dec 9-14, 2018.

79. **INVITED**: Overeem, I. 2018. Using High Resolution Topography Data in Numerical Models. NSF-EarthCube RCN on A2 HRT Workshop, Broomfield, CO, August 2018.

78. Overeem, I., 2018. Modeling Sedimentation Patterns in the GBMD Using a Network Connectivity Approach. Institute for Water Modeling, Dhaka, Bangladesh, July 2nd, 2018.

77. **INVITED**: Overeem, I., 2018. Fjords in Flux – downstream impacts of Greenland Ice Sheet melt. Arctic System Change Workshop, NCAR, Boulder, CO, April 11th, 2018.

76. **INVITED**: Overeem, I., 2018. Sedimentation Patterns in the Ganges-Brahmaputra Delta System. EAFIT, Medellin, Colombia, March 23rd, 2018.

75. **INVITED**: Overeem, I., 2018. Dynamic Arctic Coasts: developing process models for a frozen environment, Frontiers in Science Seminar, Los Alamos National Laboratory, March 5th, 2018.

74. **INVITED**: Overeem, I., 2017. How rapid change affects deltas in the Arctic region, AGU ESPL, New Orleans, December 2017.

73. Overeem, I., Lintern, G., 2017. Redefining Thresholds of River Sediment Concentrations and the Triggering of Turbidity Currents. International Conference on Fluvial Sedimentology, Calgary, Canada, July 15th-21th 2017.

72. **INVITED**: Overeem, I., 2017. Fjords in Flux: how climate change affects the Arctic Coast. Rutgers University, New Brunswick, March 31th, 2017.

71. **INVITED**: Overeem, I., 2017. Fjords in Flux: how rapid change affects deltas in the Arctic regions. Tulane University, New Orleans, March 10th, 2017.

70. **INVITED**: Overeem, I. 2017. How High-Amplitude Sedimentary Signals are Transferred in Arctic Systems, Department of Geological Sciences, University of Colorado, Boulder, March 1, 2017.

69. Overeem, I., Lintern, G., Hill, P., 2016. A Sensitivity Analysis of Triggers and Mechanisms of Mass Movements in Fjords, AGU Annual Meeting, December 11-16th.

68. Overeem, I., Wang, K., Jafarov, E., Schaefer, K., 2016. Development of a permafrost modeling toolbox. AGU Annual Meeting, December 11-16th.

67. Overeem, I., Hutton, E., Kettner, A., Piper, M., Syvitski, J., Tucker, G., 2016. Community Surface Dynamics Modeling System: Opportunities for Interaction. Forum for Arctic Modeling & Observational Synthesis Meeting, Woodshole, MA November 1-4th.

66. Overeem, I., Barnhart, K., Kay, J., 2016. Modeling Sea Ice Decline and Impacts on Coastal Processes, Forum for Arctic Modeling & Observational Synthesis Meeting, Woodshole, MA November 1-4th.

65. Overeem, I., Higgins, S., 2016. Impacts of the Inter-River Linkages project on Sediment Transport to Deltas. Belmont Forum DELTAS Synthesis WS, CUNY, September 12-15th.

64. Overeem, I., Hudson, B., Bendixen, M., 2016. Downstream Impacts of Greenland Ice Sheet Melt., NASA Surface Mass Balance WS, Lamont-Doherty, NY, September 7-8th

63. Overeem, I. 2016. Sediment Grainsize Trends in Delta Networks. JpGU Annual Meeting, Tokyo, Japan, May 24-27th, 2016.

62. **INVITED**: Overeem, I., 2016. Community Surface Dynamics Modeling System, International Soil Modeling Workshop, March 29-30th, Austin TX,

61. Overeem, I., 2016. Numerical Modeling grounded in Field Observations, ONE-DELTA Steppe Workshop, January 20-23th, 2016, Nashville, TN.

60. Overeem, I., Brakenridge, B., Hudson, B., 2015. Satellite-based Observation of Arctic River Dynamics, AGU Annual Meeting, San Francisco, December 2015.

59. **INVITED**: Overeem, I., 2015. What's new in the Arctic Coastal Zone? Arctic Observing Open Science Meeting, Seattle, November 17-19th 2015.

58. **INVITED**: Overeem, I. 2015. Sedimentation Patterns in the Ganges-Brahmaputra Delta System, Colorado Geomorphology Organization, Denver, CO, September24th, 2015.

57. Overeem, I., 2015. Greenlandic Rivers and Ice Sheet Melt, Greenland Institute of Natural Resources Seminar, Nuuk, Greenland, June 19th, 2015.

56. Overeem, I., Borkowski, L., Kettner, A.J., Rusell, B., Peddicord, H., 2015. Bringing earth surface processes simulations to large audiences. CSDMS Annual Meeting, Boulder, CO, May 26th-28th, 2015.

55. Overeem, I., 2015. Greenlandic Rivers and Ice Sheet Melt. NSF-Office of Polar Programs, Washington DC, May 8th, 2015.

54. **INVITED**: Overeem, I, 2015. Arctic Coastal Zone Processes Reflect Rapid Warming**.** Polar Center, Applied Physics Lab, University of Washington, March 17th 2015.

53. **INVITED**: Overeem, I., Higgins, S., Syvitski, J., Kettner, A.J., Brakenridge, R., 2014. The Impacts of Armoring Our Deltas: Mapping and Modeling Large-Scale Deltaplain Aggradation, AGU Fall Meeting, 2014, San Francisco, CA, December 15-19th, 2014.

52. **INVITED**: Overeem, I, 2014. Arctic Coasts Reflect Rapid Warming. University of Montana, Missoula, MT, December 2014.

51. **INVITED**: Overeem, I., 2014. Frozen Coasts Reflect Rapid Warming. Virginia Institute of Marine Sciences Seminar, NASA Arctic Colors Meeting, Gloucester Point, VA, November 2014.

50. Overeem, I., 2014. Sedimentation in Fluvio-Deltaic Plains, Department of Coastal and Oceanography Science Seminar, Nanjing University, China.

49. Overeem, I., Rogers, K., Goodbred, S., Passalacqua, P. 2014. Sedimentation in the Ganges-Brahmaputra Delta: natural mangrove forest and embanked polders. Deltas in times of Climate Change II, International Conference, Rotterdam, The Netherlands, 24-26th of September, 2014.

48. Overeem, I., Hudson, B., 2014. The Response of Greenlandic Rivers to Ice Sheet Melt, IMAU,

Utrecht University, The Netherlands, September 2014.

47. **INVITED**: Overeem, I., 2014. Sedimentation Rates in the Ganges-Brahmaputra Delta, Joint seminar for UNESCO-IHE and Deltares, Delft, The Netherlands, September 2014.

46. **INVITED**: Overeem, I., Anderson, R.S., Clow, G. 2014. The Impact of Sea-Ice Loss on Wave Dynamics and Coastal Erosion Along the Arctic Coast. Meeting with Chief of Naval Operations Strategic Study Group, Boulder, CO, April 16th, 2014.

45. Overeem, I., Hudson, B. *, Mikkelsen, A., van der Broeke, M., Rennermalm, A. 2014. Response of Greenlandic Rivers to Ice Sheet Melt. 44th International Arctic Workshop 15-16th of March, 2014.

44. Overeem, I., Rogers, K., Passalacqua, P., Canestrelli, A., Cohen, S., Matin, K., 2014. Sedimentation Patterns in the Ganges-Brahmaputra Delta System. AAPG International Meeting, Houston, TX, April 6-9th, 2014.

43. Overeem, I., K. Rogers, C. Thorne, Sarker, M., M. Steckler, S.Goodbred, C. Wilson, C. Small, M.van der Wegen, D. Roelvink, J. Atkinson, M. Zahid, N. Seeber, S. Nooner, J. Davis. 2014. Monitoring, Research and Analysis of the Bangladesh Coastal Zone, Worldbank Coastal Embankment Improvement Project Division, Dhaka, Bangladesh, March 2, 2014.

42. Overeem, I., Hudson, B.*, Welty, E.*, LeWinter, A., Mikkelsen, A.*, 2013. River Channel Expansion Reveals Ice Sheet Runoff Variations. AGU Annual Meeting, San Francisco, Dec 9-13, 2013.

41. **INVITED**: Overeem, I., Kim, W., 2013. Understanding coupled earth-surface processes through experiments and models. AGU Annual Meeting, San Francisco, Dec 9-13, 2013..

40. Overeem, I., Brakenridge, B., 2013. Arctic Rivers: Quantifying Discharge Changes Using AMSR-E. NASA NEWS Science Team Meeting, NASA Goddard, May 1-2, 2013.

39. **INVITED**: Overeem, I., On the Use of Models in Geoscience Education. WORKSHOP: The Art and Science of Reduced-Complexity Modeling in the Environmental Sciences, Boulder CO, March 27-29th 2013.

38. Overeem, I., Barnhart, K. *, Anderson, R., 2013. Modeling of Waves and Storm Surge along the Coast of Alaska, CSDMS Annual Meeting, Boulder, CO, March 23-25th, 2013.

37. **INVITED**: Overeem, I., 2013. Arctic Coastal Erosion. Van Tuyl lecture, Colorado School of Mines, Golden, CO, March 22nd, 2013.

36. **INVITED:** Overeem, I., Boyd, R., Kettner, A.J., Syvitski, J.P.M., 2012. Modeling Floodplain Depositional Patterns under Variable Flood Regimes. AGU Annual Meeting, San Francisco, Dec 3-7, 2012.

35. **INVITED**: Overeem, I., Hutton, E., Kettner, A.J., Peckham, S.P., Syvitski, J.P.M., 2012. The Community Surface Dynamics Modeling System: Experiences on Building a Collaborative Modeling Platform. AGU Annual Meeting, San Francisco, Dec 3-7, 2012.

34. Overeem, I., Syvitski, J.P.M., Kettner, A.J., 2012. Modeling Floodplain Deposits. AAPG Annual Meeting, Long Beach, CA, April 22-25, 2012.

33. **INVITED**: Overeem, I., 2012. The Community Surface Dynamics Modeling System. Talk for Chevron International Technical Seminar Series, Houston, TX, January 19, 2012.

32. **INVITED**: Overeem. I., 2012. Process modeling of Fluvio-Deltaic Stratigraphy. Talk for

Conoco Phillips Reservoir Modeling, Houston, TX, January 20, 2012.

31. Overeem, I., Hudson, B.*, Berlin, M., McGrath, D.*, Syvitski, J., Mernild, S., 2011. Fjord Sediment Plumes as Indicators of West Greenland Ice Sheet Freshwater Flux. Presentation and abstract at AGU Chapman Conference, Source to Sink Sedimentary Systems, January 2011.

30. **INVITED**: Overeem, I., Syvitski, J., Kettner, A.J., Hutton, E., Brakenridge, B., 2011. Sinking Deltas due to Human Activities, Talk for Tulsa Geological Society, March 2011, In: AAPG Search and Discovery #70094.

29. **INVITED**: Overeem, I., Anderson, R.S., Wobus, C., Matell, N.*, Urban, F., Clow, G., 2010. The impact of sea ice loss on wave dynamics and coastal erosion along the Arctic Coast. AGU Annual fall meeting 2010, San Francisco, 12-18 December.

28. **INVITED**: Overeem, I., 2010, Controls of Delta Sedimentation; A Delicate Balance. Keynote at Symposium on behalf of Prof. Kroonenberg, March 2010.

27. Overeem, I., Climatic Influences on Stratigraphy – Applications of Numerical Models. AAPG 2010 Abstract Vol, New Orleans, LA.

26. **INVITED**: Overeem, I., 2010, Sea Ice Loss Induces Arctic Coastal Erosion. Program and Abstracts of the American Polar Society Meeting 2010, Institute of Arctic and Alpine Research, Univ. of Colorado at Boulder.

25. Overeem, I., Donselaar, R., 2009. Outcrop Characteristics of a Gradual Avulsion, AAPG Annual Conference, Denver, CO, 7-10 June 2009.

24. Overeem, I., McGrath, D.*, Mernild, S., Hasholt, B., Steffen, K., Syvitski, J., 2009. Sediment Plumes as a proxy for Greenland Ice Sheet Runoff. SEDIBUD workshop. Sediment Budgets in Changing High-Latitude and High-Altitude Cold Environments, Kingston, Canada, 13-14 October 2009.

23. Overeem, I., Wobus, C.W., Anderson, R. S., Clow, G.D., Urban, F.E., Stanton, T. P., 2009. Quantifying Sea-Ice Loss as a Driver of Arctic Coastal Erosion. AGU Fall Meeting, San Francisco, December 2009.

22. Overeem, I., Changing Circum-Arctic Sediment Supply. I.A.G./A.I.G. Working Group SEDIBUD workshop. Sediment Budgets in Changing High-Latitude and High-Altitude Cold Environments, Boulder, CO, September 9-13, 2008.

21. **INVITED**: Overeem, I. 2007. Sediment Supply to the Arctic Ocean. International Polar Year start-up meeting, Groningen, March 8-9, the Netherlands.

20. **INVITED**: Overeem, I., 2007. Modeling river response to deglaciation; using clues from Baffin Island, Arctic Canada. University Center in Svalbard, Norway, February 2008.

19. **INVITED**: Overeem, I., 2007. Exploring sheet sandstone geometries with numerical process modeling, Van Tuyl Lecture, Colorado School of Mines, Golden, November 2008.

18. Overeem, I., 2007. Resilient deltas, a case-study report on the Volga and Ganges delta systems. Dynamics and vulnerability of River Deltas. LOICZ-CSDMS Workshop, 26-28 September 2007.

17. Overeem, I., Briner, J.P., Kettner, A.J., Syvitski, J.P.M., 2007. Modeling river response to deglaciation; using clues from Baffin Island, Arctic Canada. AGU, 85 (47), Fall Meet. Suppl.,

Abstract H53E-04.

16. **INVITED**: Overeem, I., Briner, J.P. Miller, G., Syvitski, J.P.M. 2006. Sediment supply to the Arctic coastal zone. Wageningen University, The Netherlands, November 2006.

15. **INVITED**: Overeem, I., Wobus, C., Anderson, R.S., Clow, G., 2005. Toward a predictive model of Arctic coastal retreat in a warming climate, Beaufort Sea, Alaska. Meeting on Longterm Coastal Modeling, Department of Civil Engineering, November 2006, Delft, The Netherlands.

14. Overeem, I., Goodbred, Jr., S.L., 2005. Numerical modeling of the impact of an enhanced monsoon on the Ganges-Brahmaputra River System. 8th International Conference on Fluvial Sedimentology, August 7-12, 2005, Delft, The Netherlands.

13. **INVITED**: Overeem, I., Briner, J.P., Miller, G., Syvitski, J.P.M., Finkel, R., 2005. Pleistocene Glacial Deposits of Clyde Fjord, Baffin Island, Talk at Shell Research Meeting on Glacigenic Reservoir Strategies, Rijswijk, the Netherlands. November 2005.

12. Overeem, I., Storms, J.E.H., Hutton, E.W.H., 2004. High-magnitude low-frequency events in stratigraphic simulation models. 32nd IGC, August 20-28th 2004, Florence, Italy.

11. Overeem, I., 2004. Unraveling Forcing Factors of Shallow Shelf Stratigraphy With Numerical Modeling. Eos Tans. AGU, 85 (47), Fall Meet. Suppl., Abstract H53E-04. San Francisco, USA.

10. Overeem, I., Storms, J.E.H. 2003. Upscaling the time parameter in stratigraphic simulation models: efficient use of high-magnitude low-frequency events, Numerical and Physical Modelling of Sedimentary Systems; from understanding to prediction. 9-11 October 2003. Utrecht, The Netherlands

9. Overeem, I., Syvitski, J.P.M., 2003. Stratigraphic Variability Due To Uncertainty In Model Boundary Conditions 8-12 Dec AGU 2003 Annual Conference, San Francisco, USA.

8. Overeem, I., Kroonenberg, S.B., 2002. Modeling Holocene stratigraphy and depocenter migration of the Volga delta due to Caspian sea level change. Science at the highest level, Denver 2002. GSA Abstracts with programs, Vol 34, No 6, 2002, Geological Society of America, Denver, USA.

7. Overeem, I., Weltje, G.J., 2001. Conditioning channel switching for a 3-D fluvio-deltaic process model, IAMG 2001, 6-12 September 2001, Cancun, Mexico.

6. Overeem, I., van Amstel, W.*, Weltje, G.J., 2000. AquaTellus; a process-response model of fluvio-deltaic sedimentation. British Sedimentological Research Group Meeting, Abstract Volume, 11-12 Sept 2000, London, UK.

5. Overeem, van Dijke, J.J., Weltje, G.J., Kroonenberg, S.B. 1999. A process response model of fluvio-deltaic sedimentation; the case of the late Cenozoic delta in the southern North Sea. Geophysical Research Abstracts, Volume 1, Number 1 1999 European Geophysical Society, 24th General Assembly, Society Symposium, Solid Earth Geophysics & Geodesy.

4. Overeem, I., Weltje, G.J., Drijkoningen, G.G., van Spaendonck, R.L.C., 1998. Geological reconstruction of Cenozoic delta deposits using 2D and 3D seismic data, Nederlands Aardwetenschappen Congres 1998, Eindhoven, The Netherlands.

3. Overeem, I., Groenensteijn, K. , Veldkamp, T., van Dijke, J.J., Kroonenberg, S.B., 1998. Holocene erosion and sedimentation history of the Volga delta related to sea-level changes. Annual Meeting International Association of Sedimentologists, April 1998, Alicante, Spain.

2. **INVITED**: Overeem, I., 1997. The Late Cenozoic delta in the southern North Sea: imaging morphology and architecture using 2D/3D seismic data. Dutch Sedimentological Society, Annual meeting 31 October 1997, Delft, The Netherlands.
1. Overeem, I., Groenensteijn, K. , Veldkamp, T., van Dijke, J.J., 1996. Holocene development of the Volga delta, Nederlands Aardwetenschappen Congres 1996, Eindhoven, The Netherlands.

Outreach Activities

- Producer of a short documentary named "Icy River" in collaboration with filmmaker Ryan Vachon. The film documents a field season in the Arctic National Wildlife Refuge during which we study river ice processes and climate change. The film is accepted at several environmental film festivals in Fall of 2024, and has been showing on RMPBS, December 2024.
- Interview with Science Magazine on Permafrost Thaw on the Tibetan Plateau and High Mountain Asia River sediment. October 2021. Resulted in Feature Article. https://www.scientificamerican.com/article/muddier-rivers-are-jeopardizing-dams-and-water-quality-for-millions/
- Reported on social media, journalists and television on extreme warm spell causing Greenland melt to NBC, Rolling Stone Magazine, NYT, Climate Watch. Video of meltwater river watched >450,000 times on twitter. July -August 2019.
- First-authored an article for general public in Earth Magazine Article: 'Greenland's growing deltas: Combining historical and modern imagery to decode change in a telltale Arctic landscape', February 2018.
- Interviews with 3 papers, a.o. the Washington Post, on Greenland sediment dynamics, October 2017.
- Science Discovery Fellow, science activities in Front Range Public Libraries, October 2015.
- Interactive Workshop for K6-12 teachers on River and Vegetation Dynamics, August 2015.
- Dataset contributor to Science on a Sphere (SOS) animations, documentation and lesson material on river dams and reservoirs, global wave and energy modeling. These animated globes are featured in >100 museums, over 33 million visitors see SOS every year.
- Invited Lecture on Arctic Coastal Erosion and hands-on mapping activities, 11th grade earth science students, Denver School of Science and Technology, March 2013.
- Lectures and hands-on field science activity in Greenland Education Tour for 23 international high-school students on 'Greenlandic Rivers as Indicators for Ice Sheet Melt', July 2011.
- Interviews with 3 national papers & Magazines on "Eroding Coast of Northern Alaska", December 2009-March 2011.

- Interview for Science News report 'Collapsing Coastlines', July 2011.
- Interviews with over 20 national and international papers and magazines on 'Sinking Deltas due to Human Activities' 2009-2010.
- Participated in 'IPY Dispatches from the field', discussing Arctic coastal erosion with participating teachers, 2009.
- Contributed a movie on Arctic Coastal Erosion to Andrew Revkin's DotEarth Blog, New York Times, 2008.
- IPY science correspondent for Dutch Science Television during polar fieldwork 2007.
- Coordinated 5 days fieldwork participation of the science editor of the Dutch Magazine 'Intermediair' resulting in a cover story on 'Ice Cold Research: How the climate changes in Greenland', May 2008.
- Worked with several popular science magazines to publish results of Ph.D. research. Resulted in 5 newspaper articles and a 1-hour TV documentary in 2002.
- Judge on the Regional Highschool Students Science Fair, Boulder County, 2003-2012.
- Climbing instructor for Dutch Alpine Club and Colorado Mountain Club, 1999-2013.
- Photography and short articles for several Dutch Outdoor magazines, 1997-2007.

University Service

University of Colorado

- Search Committee Assistant Professor INSTAAR, AY 2024-2025.
- Search Committee for VC of Sustainability for RIO, AY 2024-2025.
- Member Executive Committee, Department of Geological Sciences, AY 2024-2025.
- Member PUEC committee AY 2024-2025.
- Chair of Sarah Crump Award Committee, INSTAAR, AY 2024 – present.
- Member INSTAAR Personnel Committee, AY 2023-2024.
- Member Boulder Faculty Assembly, Climate and Education Committee, AY 2023 - present
- Member Boulder Faculty Assembly General, AY 2022-2023 - present.
- Member Field Safety and Inclusion Protocol Design, Department of Geological Sciences, AY 2022-2023.
- Member Undergraduate Curriculum Committee, Department of Geological Sciences, AY 2021-2022.
- Member ARPAC Committee, INSTAAR, AY 2020-2022.
- Member Executive Committee, Department of Geological Sciences, AY 2020-2021
- Member of INSTAAR's Justice, Equity, Diversity and Inclusion Task Force, AY 2020-2021

- University of Colorado representative for CUASHI, 2020 - present.
- Graduate education committee, Department of Geological Sciences, AY 2019-2020.
- Undergraduate quantitative skills education committee, Department of Geological Sciences, AY 2019-2020.
- Host sabbatical/visiting scientist Dr. Asa Rennermalm, INSTAAR, AY 2019-2020.
- Evaluation Committee University Seed grants, Research and Innovation Office, AY 2019.
- Search committee for Assistant Professor Surface Processes, INSTAAR, AY 2018-2019.
- Graduate education committee, Department of Geological Sciences, AY, 2018-2019.
- Graduate student admission committee, Department of Geological Sciences, AY, 2018-2019.
- Parade of Professors, 1 lecture, freshman graduate students, 15-20 students, repeats annually.
- Chair of Web and Outreach Committee, INSTAAR, 2013-2017.
- Associate Editor of Arctic, Antarctic and Alpine Research 2007-2015.
- Chair of INSTAAR biannual report committee 2004-2005.
- INSTAAR Seminar Organizer in 2003.

At Previous Institutes

- Member of Advisory Board to Dean of the Faculty of Civil Engineering and Geotechnology on 'Advancing female faculty careers in technical sciences' 2005-2007.
- Graduate Student Representative, Faculty of Mining and Petroleum Engineering, Delft University of Technology, 1998-2000.
- Curriculum Committee Student Member, Environmental and Earth System Sciences, Wageningen University, The Netherlands, 1994-1996.

Professional Service

Service through CSDMS and ESPIn

- Deputy Director Community Surface Dynamics System (CSDMS), 2018-present.
  CSDMS organizes scientists working on the Earth's surface - the ever-changing, dynamic interface between lithosphere, hydrosphere, cryosphere, and atmosphere. CSDMS brings together >2100 international experts and promotes the modeling of earth surface processes by developing and disseminating software to predict the movement of fluids, and the flux of sediment and solutes in landscapes and their sedimentary basins.
- Lead of Earth Surface Processes Summer Institute (ESPIn), an 8-day summer training for a intentionally diverse group of graduate students and early career scientists to advance inclusive Earth Surface process modeling and open-source software development skills. Organized for 25 and 29 participants respectively in 2020 and 2021. Participants work collaboratively and closely together on tutorials and on authentic research team projects, and partake in several professional development interventions, to help with professional network building. Annually organized, 2020 - present.

- Member of organizing team of 3-day CSDMS Annual Meeting; meeting has now been organized for ~120-150 attendees each year for 15 years, 2007-present.
- Chair of Selection Committee CSDMS Annual Student Modeler Award, 2009-2019.
- Chair of Selection Committee CSDMS Annual Student Stipends to promote diversity and inclusion goals, 10 stipends each year, 2013-present.
- Working Group Chair of Education and Knowledge Transfer, CSDMS, 2011-2013.
- Community Surface Dynamics Modeling System, Education and Knowledge Transfer (EKT) Specialist 2007-2018.
  Realize EKT objectives of the CSDMS project, develop an online library of Educational Modeling Material with open-source, web-based modeling labs. Supervision of software engineers responsible for the easy-to-use CSDMS Modeling software tools. Responsible for 1-day Software Carpentry and HPCC trainings, and technical modeling clinics by guest presenters associated with the CSDMS Annual Meeting.

Organized Sessions and Short Courses at Professional Meetings

- Session Convener, 'Physical Landscape Signatures of Contemporary Climate Change', AGU Annual Meeting 2021.
- Session Convener, 'The role of permafrost in structure, function, and evolution of Arctic rivers and deltas', Regional Conference on Permafrost, Boulder 2021.
- Session Convener, International Fluvial Hydraulics Meeting, River Flow, Delft, The Netherlands, 2020.
- Lead Instructor of an AGU Full-Day Course on Earth Surface Processes Modeling, 35 participants, AGU Annual Meeting, Dec 2019.
- Session Convener, 'Deltas as Complex Systems', JpGU, Tokyo, Japan, May 2016.
- Session Convener, 'Exploration, Observation and Modeling of Fast-moving glaciers, Ice Sheets and Permafrost Landscapes', AGU Annual Meeting 2016.
- Session Convener, 'Sustainable Deltas', AGU Annual Meeting 2015.
- Session Convener, 'Floodplain Dynamics Through Space and Time', AGU Annual Meeting 2014.
- Session Convener, 'Glacier, Icesheet and Icecap Hydrology', AGU Annual Meeting 2013.
- Session Convener, 'Climate Controls on Sediment Supply', AAPG Annual Meeting 2010.
- Session Convener, 'Arctic Coasts at Risk', AGU Annual Meeting 2009.
- Co-organizer of the SEDIBUD meeting of International Association of Geomorphologists at the INSTAAR Mountain Research Station, 2008.
- Symposium Organizer, "Numerical Sedimentary Systems: Limits to Upscaling?", Delft University of Technology, The Netherlands, 2007.

Editorial and Review Services

- Associate Editor, Journal of Geophysical Research, 2021 – 2024.
- Associate Editor Nature Special Reports 2016-2018.
- Associate Editor Arctic, Antarctic and Alpine Research, 2007-2016.
- Editor of Elementa Special Feature Issue 'Deltas in the Anthropocene', 2016-2017.
- Lead Editor on White Paper for Policy Makers on "Dynamics and Vulnerability of Delta Systems", published with international team of 19 scientists of International Geosphere-Biosphere Programme.
- Panel Review for the US National Science Foundation, Washington DC, Mar 2018.
- Panel Review for the US National Science Foundation, Washington DC, Dec 2016.
- Panel Review for the US National Science Foundation, Washington DC, May 2015.
- Panel Review for US National Science Foundation, Washington DC, Mar 2013.
- Panel Review for Icelandic Research Fund, Reykjavik, Iceland, Dec 2011.
- Regular reviewer for Journal of Geophysical Research, Geology, Nature Climate Change, Geophysical Research Letters, Nature Geoscience, Sedimentary Geology, Marine Geology, Journal of Coastal Research, The Cryosphere, Catena, Hydrological Sciences, Geoscientific Model Development.
- Regular ad-hoc reviewer for US National Science Foundation, Dutch National Science Foundation, Petroleum Research Fund, Polish National Science Foundation, Global Change Student Research Grant Competition.

Steering Committees

- NASA Arctic-COastal Land Ocean inteRactionS (Arctic-COLORS) field campaign Science Definition Team (SDT), 2023-2025.
- International Editorial Board QGreenland data information system, 2020 - 2022.
- Steering Committee of NSF 'Study of Arctic Environmental Change', SEARCH, 2017-2020.
- Steering Committee Member of NSF BanglaPIRE project: Life in a Tectonically Active Delta, Bangladesh 2011-2015.
- Steering Committee of the International Organization of Geomorphologists, Working Group on Sediment Budgets in Cold Environments, 2007-2010.

Policy Support

- Co-author of Science Brief entitled "Imperatives for Sustainable Delta Futures" as contribution to the United Nations Global Sustainable Development Report 2016.
- Co-proposer of the "Sustainable Deltas 2015 Initiative", initiative was adopted by the International Council for Science, Paris, France.
- Expert Panel for the Worldbank –IDA on Coastal Embankment Improvement Project Phase I, People's Republic of Bangladesh, 2013 and 2014.

- Advisor to Worldbank, on Meghna Estuary Sediment Dynamics/Crossdam Feasibility Study, Washington DC, 2012.
- Invited Keynote talk on “World Deltas Dialogues Scoping Session”, for international group of policy makers, consulting firms and Louisiana State Senator, Mrs. Mary Landrieu, Washington DC, 2009.

Languages

Dutch: native reading, writing, speaking
English: near-native reading, writing, speaking
French: proficiency reading, writing, speaking
German: basic proficiency reading, writing, speaking
Spanish: basic proficiency reading, writing, speaking
Others: rudimentary Norwegian, Nepali.

Python, C, C++