

CURRICULUM VITAE

Frank-Oliver Nitsche

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EDUCATION

- Ph.D. Geology and Geophysics (magna cum laude)** 1997
University of Bremen, Germany. Thesis: "Development of a sedimentation model for the Bellingshausen and Amundsen Seas".
- Diplom in Geophysics** 1994
Institute of Geophysics, University of Kiel, Germany. Thesis: "Investigations of magnetic anomalies in archaeology using three-dimensional models and cross-correlation".
- Additional training in Marine Geotechnics** 1991/92
Marine Geotechnics M.Sc. Program, School of Ocean Sciences, University of Northwest Wales, Bangor, UK

RESEARCH INTERESTS

Glacial and glacial-marine sediment processes; Seafloor and benthic habitat mapping; Estuarine and coastal sediment dynamic and transport; Continental margins; Sub-surface imaging; GIS; Data integration and Visualization

PROFESSIONAL EXPERIENCE

- Research Scientist** 2011 - present
Lamont-Doherty Earth Observatory of Columbia University, U.S.A.
- Adjunct Professor** 2011 - 2017
Barnard College, NYC, U.S.A.
- Associate Research Scientist** 2010 - 2011
Lamont-Doherty Earth Observatory of Columbia University, U.S.A.
- Doherty Associate Research Scientist** 2004 - 2010
Lamont-Doherty Earth Observatory of Columbia University, U.S.A.
- Postdoctoral Scientist** 2001 - 2004
Lamont-Doherty Earth Observatory of Columbia University, U.S.A.
- Postdoctoral Scientist** 1997 - 2001
Institute of Geophysics, ETH-Zürich, Switzerland
- Research Assistant (Marine Geophysics)** 1994 - 1997
Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany
- Research Assistant (Environmental Geophysics / Archaeometry)** 1992 - 1994
Institute of Geophysics, University of Kiel, Germany
- Research Assistant (Marine Geology)** 1992
GEOMAR, Kiel, Germany
- Part-time Employee and Field Assistant (Environmental Consulting)** 1990 - 1991
GeCon Geophysik GmbH, Kiel, Germany
- Field Assistant (3D seismic survey, summer only)** 1989
Prakla-Seismos AG, Hannover, Germany

TEACHING EXPERIENCE

Courses taught:

GIS for Sustainable Sciences (Fall 2019, Columbia University)
 Environmental Data Analysis (EESC BC 3017, Fall 2011 to 2017 Barnard College)
 Environmental Science Senior Seminar (EESC BC3801, Spring 2016/2017, Fall 2016 Barnard/Columbia College)
 Workshop in Sustainable Development (EESC BC3300, Fall 2016, Barnard College)
 Environmental Field Class (1 week) on RV Seawolf on the Hudson River (2010-2017, Barnard College)
 Reflection seismic I (1999, 2000, ETH Zürich).
 Reflection Seismic II – processing lab, (co-instructor; 1998 - 2000, ETH Zürich).
 Advanced geophysics field class (instructor for seismic; Spring 1998 - 2001, ETH Zürich).
 Environmental geophysics summer school (lecturer and field instructor; June 2000, Nordic Science Policy Council and Nordic Academy for Advanced Study (NorFA), Oslo, Norway).

Guest lectures:

Lecture on GIS and Data representation, Env. Measurements (fall 2010 – 2017, Barnard College)
 Lecture on high-resolution seismic and sub-bottom profiling, LDEO training program for scientists from India (Sep 2011, Lamont Doherty)
 Lecture on seafloor mapping, Coastal morphology class (Sep. 2011, Univ. Southern Carolina, Columbia)
 Lecture on Marine geology and seafloor mapping, EI practicum (Oct 2008, Columbia University)
 Lecture on shallow water mapping for Lamont summer intern program (July 2004 - 2007).
 Lecture on Hudson River Research for the Hudson River Watershed field class of SUNY Albany (May 2004).
 Lecture on seismic methods during environmental geophysics course, E3221 (Nov 2002, Columbia University).
 Marine Acoustics and Bottom Mapping (lecturer and field instructor; July 2005, July 2006, July 2007; July 2008 Hudson River “RiverSummer” summer school, R/V Walford).

Graduate student co-adviser /external adviser:

Edwige Lauture (Masters Thesis, Queens College, CUNY, 2015-2017),
 (external co-advisor/committee member)
 Jun Zuh (Ph.D. University of Massachusetts, Boston, 2010)
 (external advisor)
 Roman Spitzer (Ph.D., ETH, 1997-2001)
“Improving 2- and 3-D high-resolution seismic reflection surveying”,
 Cedric Schmelzbach (Master thesis, ETH, 2000-2001)
“Ultra-shallow seismic reflection imaging”,
 Michael Knüsel (Master thesis, ETH, 1998-1999)
“Improvement of a 2D seismic reflection line by reprocessing”,

Supervised summer students, interns, and senior theses:

Stephanie Arevalo (Housatonic Community College 2019), Celeste Pallone (Barnard 2018/19), Sufyan Kahlid (CC, 2018/19) Claire Johnson (Barnard, 2017), Nada Elgamal (Hunter College, 2017), Evelyn Mayo (Barnard 2016), Allison Hook (CU 2015/16), Maya Becker (CU 2014/15), Pattaramart Makmoon (Mahidol Univ. 2014), Thitimar Chongtaku (Mahidol Univ. 2014), Mary McElroy (LDEO/Barnard 2013), Erika Zacher (LDEO intern, 2013), Kittisak Nilrat (Graduate/GEBCO student, Univ. of New Hampshire, 2011), Rodrigo Perdue (LDEO, 2010), Elise Luce (LDEO 2009), Holly Menten-Weil (LDEO 2008), Nicole Robinson (LEDO 2008), Joni Baumgarten (LDEO 2007), Pablo Garcia Del Real (LDEO 2007), Mackenzie Haberman (LDEO/Barnard College 2006), Alisha Goldstein (LDEO 2005), Andrew Melkonian (LDEO 2004), Chris Bertinado (LDEO 2002-2005), Martin Polak (ETH 2000/2001), Samuel Neukomm (ETH 2000/2001), Niki Ormuz (ETH 2000), Tiziana Angioni (ETH 1999/2000), Friso Brouwer (ETH 1999), and Beatrice Benjumea (ETH 1998).

FIELD EXPERIENCE

- Chief scientist: Subbottom survey and sediment sampling for Long Island Sound mapping project, phase 2, (April 2018).
- Co-Chief scientist: Sediment sampling for Long Island Sound mapping project, phase 2 (August 2017).
- Chief scientist: Antarctic cruise NBP1503, Geophysical and oceanographic surveys, (March 24-May 3 2015).
- Chief scientist: Subbottom survey and Sediment sampling for HRF storm sediment project, (April 18-May 6 2014).
- Co-Chief scientist: Sediment sampling for Long Island Sound mapping project, pilot study (June 2013).
- Chief scientist: Subbottom survey for the Long Island Sound mapping project, pilot study (April 2013).
- Co-Chief scientist: Multi-beam and subbottom survey for the Long Island Sound mapping project (March 2013).
- Co-Chief scientist: Sediment sampling on the Hudson River (April 2010), R/V Prichard.
- Scientist: Multibeam bathymetry and subbottom mapping in the Amundsen Sea, West Antarctica. (Feb 5th – March 12nd, 2010) Oden cruise OSO0910.
- Scientist: Multibeam bathymetry mapping in the Amundsen Sea, West Antarctica. (Jan 5th – March 2nd, 2009) RV Palmer cruise NBP0901.
- Scientist: Multibeam bathymetry mapping, and sediment sampling in the Amundsen Sea, West Antarctica. (Feb 2nd – March 26th, 2007) RV Palmer cruise NBP0702.
- Chief scientist: High-resolution geophysical survey (sidescan sonar, single-channel seismic, RTK-GPS) for the Tappan Zee Bridge environmental impact study (May 2006).
- Scientist: Deploying of Moorings, Installation of weather station, and CTD casts in the Amundsen Sea, West Antarctica. (Feb 10th – April 11th, 2006) RV Polarstern cruise ANT23-4.
- Chief scientist: Benthic Mapping surveys on the Hudson River (April-May 2004; March-May 2003, March-May 2002, April-May 2001, Riverkeeper).
- Co-Chief scientist: Sediment sampling on the Hudson River (Gravity cores and grab samples), June 2004, 2003, 2002, 2001, R/V Prichard, R/V Walford.
- Scientist: Marine magnetic survey in the Hudson Highlands (on NOAA Rude) as part of the NOAA exploration project to identify and classify shipwrecks in the Hudson River. (June 9th – 11th, 2004)
- Scientist: ADCP deployment and recovery May, June 2004, Riverkeeper.
- Crew-Chief: Reflection seismic survey using a land-streamer, Basel, June 2000.
- Crew-Chief: High-resolution seismic survey Birrfeld, Switzerland, Nov 1999.
- Co-Chief: High-resolution 3D reflection seismic survey in Flaach, Switzerland, Feb-Mar 1999.
- Scientist: Environmental geophysical surveys in alpine valleys, Switzerland, 1998-2000
- Scientist: Reflection and OBS seismic survey offshore Namibia, Dec 1995 – Jan 1996, R/V Polarqueen.
- Scientist: Geophysical survey of the Bellingshausen Sea, March – May 1995, R/V Polarstern.
- Research Assistant: Geophysical survey of the Amundsen and Bellingshausen Seas, Jan – Apr 2004, R/V Polarstern.
- Research Assistant: GLORIA sidescan survey of the East Greenland margin, Aug - Sep 1992, R/V Livonia.
- Field Assistant: Environmental and archaeological surveys using geoelectric, magnetic and shallow surface refraction seismic, Northern Germany, 1990-1993.
- Field Assistant: DEKORP 1989 3D seismic survey, Prakla-Seismos, Aug 1989.

GRANTS AND AWARDS

- NSFPLR-NERC: Stability and Instability – Records of External Drivers and Resulting Past Behavior of Thwaites Glacier – LDEO subaward (**Nitsche PI**)
Uni. Houston, Period 4/1/2018/3/31/2022; Award: \$177,720.
- Long Island Sound Mapping Project - phase 2 (**Nitsche PI**, T. Kenna, V. Ferrini, C. McHugh, R. Flood (Co-Pis)
CT-DEEP; Grant Period 08/01/2017 – 04/30/2019; Award: \$1,113,945.
- Assessing impacts of recent storm activity on sediment transport and storage in the Hudson River (**Nitsche**, Kenna, PI). HRF; Grant Period 06/01/2013-05/31/2017; Award: \$206,241.
- Vulnerability of East Antarctic ice streams to warm ocean water incursions (**Nitsche PI**)
NSF-PLR; Grant Period 07/01/2013 – 06/30/2017; Award: \$374,241.
- Long Island Sound mapping project - pilot (**Nitsche**, PI; Kenna, Ferrini, McHugh, Flood Co-Pis)
CT DEEP; Period 12/21/2012 – 06/30/2014; Award: \$516,490.
- Arctic Ocean Visualization and Outreach (**Nitsche**, PI; Ryan Co-Pi)
NSF; Period 10/01/2010 – 09/30/2013; Award: \$215,031.
- Hudson River Shallow Water Mapping (**Nitsche**, Kenna, PI)
NOAA via subcontract from Fugro; Period 2009-2010; Award: \$119,999.
- Cross-shelf troughs as indicators of ice sheet dynamics along the West Antarctic continental margin (**Nitsche**, PI),
NSF; Grant Period 2009-2012; Award: \$160,606.
- Using X-ray fluorescence spectrometry to rapidly measure metal distributions in Hudson River sediment cores (Kenna, T.; **Nitsche, F.**; PI)
NYSDEC; Grant Period: 2009-2011; Award: \$52,750 + \$27,250 supplement.
- Tappan Zee high-resolution acoustic mapping - extension (**Nitsche**, Kenna, PI) ,
EarthTech; Grant Period: 2008-2009; Award: \$53,732.
- Tappan Zee high-resolution acoustic mapping (**Nitsche**, Kenna, PI) ,
EarthTech; Grant Period: 2006-2008; Award: \$106,854.
- Compilation of a bathymetric map of the Amundsen Sea continental shelf (**Nitsche**, Jacobs, PI),
Supplement to NSF project Continued Growth of the Antarctic Multibeam Bathymetry Data Synthesis as a Resource for Antarctic Geoscience Research and Education (#0440655) (Carbotte, Ryan PI);
NSF; Grant Period 2006-2007; Award: \$23,583.
- Distribution, Timing, and Dynamic of Deposition in the Hudson River Estuary (**Nitsche**, Kenna, PI),
Hudson River Foundation; Grant period: 2005-2006; Award: \$69,613.
- Sediment sample analysis for juvenile sturgeon study (Bell, **Nitsche**, PI),
NYSDEC; Grant period: 2004 - 2005; Award: \$14,466.
- Exploring the maritime archaeology of the Hudson River (R. Flood (Stony Brook) PI; **Nitsche**, Bell (Co-PI),
NOAA via subcontract from SUNY Stony Brook; Grant period: 2004 - 2005; Award: \$8,003 .
- Birrfeld 2D-high-resolution seismic survey (with J. Ansorge, ETH Zurich, as PI),
Schweizer Geophysikalische Gesellschaft, Grant period: 1999 - 2000; Award: 20,000 CHF.
- Erasmus Fellowship for studying at Bangor University, UK,
Erasmus Student Mobility Program of the European Union; Grant period: 1991 - 1992); Award: 6 month tuition and travel expenses.

PROFESSIONAL SERVICE

- Member of the SCAR Standing Committee on Antarctic Data Management (SCADM) (since 2017)
- Member of SCAR Antarctic Seismic Library System (SDLS) coordination group (since 2016)
- Co-Convener and Chair of the AGU fall meeting session on “Geology of Glaciated Margins: (Dec 2016)
- Participant of the NSF/ UNOLS workshop on science drivers for the next Polar Research Vessel (Feb 2011)
- Participant/Presenter on the workshop on Antarctic and Arctic seafloor mapping in Stockholm (May 2011)

Member of Editorial Board of the International Bathymetric Chart of the Southern Ocean (IBSCO) (since 2011)
Participant of the NSF workshop on scientific capabilities of the Icebreaker Oden (Feb. 2008)
Co-Chair of the SCAR action group on "An assessment of multibeam data-acquisition needs recommendation of best procedures for multibeam-data acquisition for characterizing the continental-scale retreat of the Antarctic Ice Sheet from the outer continental shelf to the modern position" (2010-2012)
Member of the NYS DEC subcommittee for habitat classification (2004 - 2011).
Participant of the NY Harbor restoration workshop (Oct 2005).
Participant of the Passaic River restoration workshop held by the Army Corps of Engineers, NY (Oct 2004).
Participant of the Hudson River Foundation workshop on sediment transport in the Hudson River (Nov 2003)
Co-Chair of the ISAES 2007 session on "Databases, maps, and tools for exploring Antarctica" (Aug 2007)
Convener of the AGU fall meeting session on "Dynamic Processes of Estuaries" (2002).
Reviewer for *Geophysical Research Letters*, *Geochemistry*, *Geophysics*, *Geosystems*, *Journal of Quaternary Sciences*, *Journal of Environmental and Engineering Geophysics*, *Marine Geology*, *Geomorphology*, *Water Research*, *Palaeogeography*, *Palaeoclimatology*, *Palaeoecology*, *Geological Society of America Bulletin*, *Estuarine, Coastal and Shelf Sciences*, *Sedimentology*, *Global and Planetary Change*, *Science Advance*.
Reviewer for grant proposals of the National Science Foundation, NERC, City University of New York, Hudson River Foundation, and the Swiss National Science Foundation, Australian Antarctic Division (AAD).

PROFESSIONAL SOCIETIES

Deutsche Geophysikalische Gesellschaft (since 1993).
American Geophysical Union (since 1995).
Society of Exploration Geophysicists (since 1998).
Estuarine Research Foundation (since 2005).
Hudson River Environmental Society (since 2010)

PUBLIC OUTREACH

Skype presentation and discussion with two middle schools to talk about Antarctic research (Dec 2018)
Talked about science careers at the J. B. Cavallaro middle school (IS 281) career day (May 2018)
Demonstrated GeoMapApp at Lamont Open House (Oct 2017)
Demonstrated seafloor mapping to 40 high-school students as part of the World Science Festival Marine Science Workshop (NYU, Nov 2017)
Demonstrated GeoMapApp at Lamont Open House (Oct 2016)
Earth2Class workshop for teacher training on "Ice-Ocean Interaction in Antarctica" including discussion with Science Teachers. Lamont Campus, Palisades, NY, 13. Feb 2016.
PolarTrek webinar live from the NBP1503 cruise (April. 19 2015)
Talk on Hudson River Sediments to Ecology summer program for teachers at Bond Street College for Education (July 21, 2015).
Presented Hudson River Geology and general info during two trips of the Mystic Whaler as part of the World Science Festival, NY (May 31, 2014, May 2015)
Hudson River talk to high school students, Lamont (July 18, 2014)
Mentor of NSF PolarTrec teacher for upcoming Antarctic expedition (Nov 2013 – 2016).
Presented Hudson River Geology and general info during two trips of the Mystic Whaler as part of the World Science Festival, NY (June 1, 2013)
Babcock, S., Warny, S., Nitsche, F., 2013. Global Change in Local Places. Earth Exploration Toolbook (<http://serc.carleton.edu/eet/>). Online chapter.

- Presented talk about Antarctic Bathymetry at Art Show "Materializing Information" hosted by Melissa Clark, who also used some Antarctic bathymetry data for her piece. Stony Brook Simon Center for Geometry and Physics (19 February, 2013)
- Public Lecture "Expeditionen in die Antarktis", Sande, Germany, (14 June 2011)
- Earth2Class workshop for teacher training on "Footprints of past glaciations in Antarctica" including discussion with Science Teachers. Lamont Campus, Palisades, NY, 19. March 2011
- Public Lecture "Secrets of the Deep – the bottom of the Hudson River", New York Power boat and Sailing Squadron, Manhattan, NY, USA, 03/22/2010.
- Earth2Class workshop for teacher training on Estuaries and sediments in the Hudson River, Lamont Campus, Palisades, NY (24.04.2010)
- Demonstrating reconstruction of past ice flow at Polar Festival at the American Museum of Natural History, New York, NY (29.05.2010).
- Provided illustrations of the Hudson River Bottom for the Westchester Riverwalk in Terrytown.
- Demonstrated Ice Flow and bottom features at Lamont Open House (02.10.2010)
- Taught to two elementary school classes (PS51) about Hudson River at the environmental center at Pier 84 of the Hudson River Park Trust (20.10.2010)
- Gave public lecture "Secrets of the Deep – the bottom of the Hudson River", at Bezac Environmental Center, Yonkers, NY (21. November 2009).
- Gave public lecture "Ice Melt in Antarctica and Global Warming" at the World Fellowship Center, NH (9. August 2009).
- Provided data for art the project "Underfoot – Sound in the Frying Pan" by Melissa Clark (May 16/17 2009).
- Provided content for New York Magazine article "Secrets of the Deep" (May 18 2009).
- Presented "Exploring the Southern Ocean" during the Polar Fair at the Maryland Science Center, Baltimore (4.-5. April 2009).
- Created river bottom visualizations for History Channel show "Super City: New York" (22. September 2008).
- Lectured on Liberty Science Center Hudson River cruise (October 2007).
- Demonstrated 3D-visualization and GIS (including GoogleEarth) during Lamont Open House (2001-2007).
- Presented the Benthic Mapping Project at the Columbia University Community Open House (2004).
- Prepared information and interactive material including GIS examples and 3D-visualization for the 2005 Hudson River Snapshot Day (high school program).
- Provided material and demonstrated for the ABC local news: "Lessons on the Hudson River" (22. July 2005).
- Gave public lectures at Cloister sNature Society (2005) and Liege of Naturalists, Sterling Forest State Park Visiting Center (2005).

PEER REVIEWED JOURNAL ARTICLES AND BOOK SECTIONS (59 total, 18 first author, [Google Scholar](#))

- Nitsche, F.O.**, Correia, R., 2019. East Antarctic ice flow dynamic based on subglacial landforms near Dibble Glacier. *Marine Geology* 417, 106007. <https://doi.org/10.1016/j.margeo.2019.106007>
- Kirkham, J.D., Hogan, K.A., Larter, R.D., Arnold, N.S., **Nitsche, F.O.**, Gollledge, N.R., Dowdeswell, J.A., 2019. Past water flow beneath Pine Island and Thwaites glaciers, West Antarctica. *The Cryosphere* 13, 1959–1981. [doi: 10.5194/tc-13-1959-2019](https://doi.org/10.5194/tc-13-1959-2019)
- Bohoyo, F., R. D. Larter, J. Galindo-Zaldívar, P. T. Leat, A. Maldonado, A. J. Tate, M. M. Flexas, E. J. M. Gowland, J. E. Arndt, B. Dorschel, Y. D. Kim, J. K. Hong, J. López-Martínez, A. Maestro, O. Bermúdez, **F. O. Nitsche**, R. A. Livermore & T. R. Riley (2018). Morphological and geological features of Drake Passage, Antarctica, from a new digital bathymetric model, *Journal of Maps*, doi: 10.1080/17445647.2018.1543618.
- Bart, P.J., Anderson, J.B., **Nitsche, F.O.**, 2017. Post-LGM Grounding-Line Positions of the Bindschadler Paleo Ice Stream in the Ross Sea Embayment, Antarctica: Post-LGM Grounding-Line Positions. *Journal of Geophysical Research: Earth Surface.* , 122(10), p. 1827-1844. doi:10.1002/2017JF004259.

- Nitsche, F.O.**, Porter, D., Williams, G., Cougnon, E.A., Fraser, A.D., Correia, R., Guerrero, R., 2017. Bathymetric control of warm ocean water access along the East Antarctic Margin. *Geophys. Res. Lett.* 44, 2017GL074433. doi:10.1002/2017GL074433D.
- Davies, D., Bingham, R.G., Graham, A.G.C., Spagnolo, M., Dutrieux, P., Vaughan, D.G., Jenkins, A., **Nitsche, F.O.**, 2017. High-resolution sub-ice-shelf seafloor records of twentieth century ungrounding and retreat of Pine Island Glacier, West Antarctica. *J. of Geophys. Res.: Earth Surface* 122, 1698–1714. doi:10.1002/2017JF004311.
- Klages, J.P., Kuhn, G., Hillenbrand, C.-D., Smith, J.A., Graham, A.G.C., **Nitsche, F.O.**, Frederichs, T., Jernas, P.E., Gohl, K., Wacker, L., 2017. Limited grounding-line advance onto the West Antarctic continental shelf in the easternmost Amundsen Sea Embayment during the last glacial period. *PLOS ONE* 12, e0181593. doi:10.1371/journal.pone.0181593.
- Kuhn, G., Hillenbrand, C.-D., Kasten, S., Smith, J. A., **Nitsche, F. O.**, Frederichs, T., Wiers, S., Ehrmann, W., Klages, J. P., Mogollón, J. M., (2017). Evidence for a palaeo-subglacial lake on the Antarctic continental shelf. *Nature Communications*, 8, 15591. doi: 10.1038/NCOMMS15591.
- Williams, G. D., A.D. Fraser, A. Lucieer, D. Turner, E. Cougnon, P. Kimball, T. Toyota, T. Maksym, H. Singh, **F. Nitsche**, and M. Paget (2016), Drones in a cold climate, *Eos*, 97, doi:10.1029/2016EO043673. Published on 19 January 2016.
- Nitsche, F.O.**; Larter, R D; Gohl, K.; Graham, A G C; Kuhn, G. (2016). Bedrock Channels in Pine Island Bay, West Antarctica. In: Dowdeswell, J A; Canals, M; Jakobsson, M, Todd, B J, Dodeswell, E K; and Hogan, K A (eds) *Atlas of Submarine Glacial Landforms: Modern, Quaternary and Ancient*. *Geol. Soc. Lon. Mem.*, 46, 217-218. Doi: 10.1144/M46.1.
- Nitsche, FO**; Larter, R D; Gohl, K.; Graham, A G C; Kuhn, G. (2016). Crag-and-tail features on the Amundsen Sea continental shelf, West Antarctica In: Dowdeswell, J A; Canals, M; Jakobsson, M, Todd, B J, Dodeswell, E K; and Hogan, K A (eds) *Atlas of Submarine Glacial Landforms: Modern, Quaternary and Ancient*. *Geol. Soc. Lon. Mem.*, 46, 199-200. DOI: 10.1144/M46.2.
- Bart, P.J., **Nitsche, F.O.** (2016). The middle shelf Grounding Zone Wedge in Glomar Challenger Basin, Ross Sea. In: Dowdeswell, J A; Canals, M; Jakobsson, M, Todd, B J, Dodeswell, E K; and Hogan, K A (eds) *Atlas of Submarine Glacial Landforms: Modern, Quaternary and Ancient*. *Geol. Soc. Lon. Mem.*, 46, 239-240. The Geological Society of London, 2016. DOI: 10.1144/M46.73.
- Graham, A.G.C., Jakobsson, M., **Nitsche, F.O.**, Larter, R.D., Anderson, J.B., Hillenbrand, C.D., Gohl, K., Klages, J., Smith, J.A., Jenkins, A. (2016) Submarine glacial-landform distribution across the West Antarctic margin, from grounding line to slope: the Pine Island-Thwaites ice stream system. In: Dowdeswell, J A; Canals, M; Jakobsson, M, Todd, B J, Dodeswell, E K; and Hogan, K A (eds) *Atlas of Submarine Glacial Landforms: Modern, Quaternary and Ancient*. *Geol. Soc. Lon. Mem.*, 46, 493-500. Doi: 10.1144/M46.173.
- Graham, A.G.C., **Nitsche, F.O.**, Larter, R.D., Gohl, K. (2016). Submarine landform assemblage produced beneath the Dotson-Getz palaeo-ice stream, West Antarctica. In: Dowdeswell, J A; Canals, M; Jakobsson, M, Todd, B J, Dodeswell, E K; and Hogan, K A (eds) *Atlas of Submarine Glacial Landforms: Modern, Quaternary and Ancient*. *Geol. Soc. Lon. Mem.*, 46, 345-348. DOI: 10.1144/M46.176. Williams, GD; AD Fraser; A Lucieer; D Turner; E Cougnon; P Kimball; T Toyota; T Maksym; H Singh; **F Nitsche**; and M Paget (2016), Drones in a cold climate, *Eos*, 97, doi:10.1029/2016EO043673.
- Klages, J.P. G. Kuhn, A.G.C. Graham, C.-D. Hillenbrand, J.A. Smith, **F.O. Nitsche**, R.D. Larter, K. Gohl, 2015. Palaeo-ice stream pathways and retreat style in the easternmost Amundsen Sea Embayment, West Antarctica, revealed by combined multibeam bathymetric and seismic data. *Geomorphology*, 245, 207-222, doi: 10.1016/j.geomorph.2015.05.020.
- Larter, R.D., Anderson, J.B., Graham, A.G.C., Gohl, K., Hillenbrand, C.-D., Jakobsson, M., Johnson, J.S., Kuhn, G., **Nitsche, F.O.**, Smith, J.A., Witus, A.E., Bentley, M.J., Dowdeswell, J.A., Ehrmann, W., Klages, J.P., Lindow, J., Cofaigh, C.Ó. and Spiegel, C., 2014. Reconstruction of changes in the Amundsen Sea and Bellingshausen Sea sector of the West Antarctic Ice Sheet since the Last Glacial Maximum. *Quat. Sci. Rev.*, 100: 55-86.

- Bentley, M.J., Ó Cofaigh, C., Anderson, J.B., Conway, H., Davies, B., Graham, A.G.C., Hillenbrand, C.-D., Hodgson, D.A., Jamieson, S.S.R., Larter, R.D., Mackintosh, A., Smith, J.A., Verleyen, E., Ackert, R.P., Bart, P.J., Berg, S., Brunstein, D., Canals, M., Colhoun, E.A., Crosta, X., Dickens, W.A., Domack, E., Dowdeswell, J.A., Dunbar, R., Ehrmann, W., Evans, J., Favier, V., Fink, D., Fogwill, C.J., Glasser, N.F., Gohl, K., Gollledge, N.R., Goodwin, I., Gore, D.B., Greenwood, S.L., Hall, B.L., Hall, K., Hedding, D.W., Hein, A.S., Hocking, E.P., Jakobsson, M., Johnson, J.S., Jomelli, V., Jones, R.S., Klages, J.P., Kristoffersen, Y., Kuhn, G., Leventer, A., Licht, K., Lilly, K., Lindow, J., Livingstone, S.J., Massé, G., McGlone, M.S., McKay, R.M., Melles, M., Miura, H., Mulvaney, R., Nel, W., **Nitsche, F.O.**, O'Brien, P.E., Post, A.L., Roberts, S.J., Saunders, K.M., Selkirk, P.M., Simms, A.R., Spiegel, C., Stollendorf, T.D., Sugden, D.E., van der Putten, N., van Ommen, T., Verfaillie, D., Vyverman, W., Wagner, B., White, D.A., Witus, A.E. and Zwartz, D., 2014. A community-based geological reconstruction of Antarctic Ice Sheet deglaciation since the Last Glacial Maximum. *Quaternary Science Reviews*, 100: 1-9.
- Jacobs, S., C. Giulivi, P. Dutrieux, E. Rignot, **F. Nitsche**, and J. Mouginot (2013), Getz Ice Shelf melting response to changes in ocean forcing. *J. Geophys. Res. Oceans*, 118, 4152–4168, doi:10.1002/jgrc.20298.
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- Roth, M., R. Spitzer and **F.O. Nitsche**, 1999. Seismic survey across an environment with very high Poisson's ratio, Proceedings of 12th Annual Symposium on the Applications of Geophysics to Environmental and Engineering Problems (SAGEEP), Oakland, U.S.A., 49-55.
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Nitsche, F.O., 1998.

Bellingshausen and Amundsen Seas: Development of a sedimentation model (Bellingshausen- und Amundsenmeer: Entwicklung eines Sedimentationsmodells), Berichte zur Polarforschung, 258, 143 pp. (Ph.D. thesis, published in German).

Nitsche, F.O., 1994.

Investigations of magnetic anomalies in archaeology using three-dimensional models and cross-correlation (Untersuchungen magnetischer Anomalien in der Archäologie mit dreidimensionalen Modellen und Kreuzkorrelation). Diplomarbeit, University of Kiel, Germany, 95 pp. (master thesis, in German).

INVITED PRESENTATIONS

Nitsche, F.O., Kenna, T (2018). The Impacts of Storms Irene and Sandy on Sediments in the Hudson River. Hudson River Foundation Seminar Series, New York, December 2018. (invited talk).

Nitsche, F.O., Kenna, T (2016). Changes in Hudson River sediment distribution after storms Irene and Sandy. Hudson River Foundation seminar series, April 2016 (invited talk).

Nitsche, F.O., Sediment distribution and Dynamic in the Hudson River Estuary. City College, NY, March 20 2014. (invited talk)

Nitsche, F.O., M. Jakobsson, A. Graham, R. Larter, K. Gohl, and J. Anderson. Variations of bed conditions of West Antarctic paleo ice streams and potential impacts on ice flow. Abstract C43G-05. AGU Fall meeting 2013, San Francisco, CA, USA, 6 December 2012 (invited talk).

Nitsche, F.O., Improved assessment of contaminant distributions in urban estuaries – a basis for remediation. Queens College Colloquium, 9 May 2012 (invited talk).

Nitsche, F.O., Spatial variation of sediment environments in the Hudson River Estuary, University of South Carolina, Columbia, SC, September 1st 2011 (invited talk).

Nitsche, F.O., Paleo ice flow on the West Antarctic continental margin, Rutgers, SEG students chapter, Newark, USA, 6 April 2011 (invited talk).

Nitsche, F.O., Kenna, T.C., 2010. Spatial variation of sediment deposition in the Hudson River – a detailed inventory and potential causes, OS33G-01. 2010 AGU Fall meeting, San Francisco, CA, USA, December 2010 (invited talk).

Nitsche, F.O. Ice Melt in Antarctica and Global Warming. World Fellowship Center, New Hampshire, USA, August 20 2009 (invited public lecture).

Nitsche, F.O. Secrets of the Deep: The Bottom of the Hudson River. Bezak Environmental Education Center, Yonkers, NY, USA. 21 November 2009 (invited lecture).

Nitsche, F.O. Estuarine Sediment Processes: Examples from the Hudson River, Earth Science Seminar, University of Delaware, Lewis, April 9, 2008. (invited talk).

Nitsche, F.O. Variations and Controls of Estuarine Sedimentation: Examples from the Hudson River. Oceanography Seminar. Old Dominion University, Norfolk, VA. March 28, 2008. (invited talk)

Nitsche, F.O. Uncovering the Bottom of the Hudson River Estuary: Morphology and Sediment Distribution. Lige of Naturalists, Sterling Forest State Park Visiting Center. 17.04.2005. (invited talk)

Nitsche, F.O. Uncovering the Bottom of the Hudson River Estuary: Morphology and Sediment Distribution. Closter Nature Society Seminar Series. 21.01.2005. (invited talk)

Nitsche, F.O., R. Bell, W.B.F. Ryan, S.M. Carbotte. The Hudson River Benthic Mapping Project - An example of process related classification of sedimentary environments. GeoHab 2004, Galway, Ireland. 05.07.2004 (invited talk)

Nitsche, F.O., W.B.F. Ryan, S. Carbotte, R. Bell and R. Flood. Process Based Classification of the Hudson River Estuary. 1st International Multibeam User Workshop. Bremerhaven, Germany. 30.06.2003. (invited talk)

Nitsche, F.O. The Hudson River Benthic Mapping Project. Naval Research Laboratory. Washington D.C. 07.03.2003. (invited talk)

Nitsche, F.O. Shallow Water Sediment Dynamics. Cardiff University, U.K. 26.09.2002. (invited talk)

Nitsche, F.O. The Hudson River Benthic Mapping Project. Geological Service of Canada, Ottawa, Canada, 15.02.2002. (invited talk)

Nitsche, F.O. High-resolution reflection seismic surveys in alpine valleys of Switzerland. Lamont-Doherty Earth Observatory of Columbia University, Palisades NY, U.S.A. Dec. 2000. (invited talk).

Nitsche, F.O. The use of shallow reflection seismic in mapping of glacial and glaciofluvial deposits in Switzerland. Colloquium of the Institute of Geophysics of the University of Lausanne, Switzerland, 1998. (invited talk)