Daniel Emanuelsson, Ph.D.

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Profile

I am a recent Victoria University of Wellington Earth Science doctorate. As a central part of multi-national teams and frontier research collaborations, I have gained extensive experience from several disciplines and my skills originate from both academia and client-oriented consulting. My research interests lie within the areas of climate dynamics; paleoclimatology; experimental design; laser spectroscopy; water stable isotopes; continuous flow analysis (CFA); decadal variability; tropical and midlatitude teleconnections with polar regions; atmosphere and sea-ice interactions; proxy/observational, data reanalysis/model comparisons; coastal and environmental processes; data analysis; and field campaigns.

Skills

Programming: Advanced programming in Matlab, basic command of Python and Fortran.

Visualization: Matlab, GIS (ArcMap, esri).

Analysis Skills: Geospatial data-analysis in the area of climate science (e.g. utilizing reanalysis products, GCM output); time series analysis; statistical analysis; EOF analysis; spectral analysis; multiple linear regression analysis.

Languages: Excellent communication skills and proficiency in spoken and written English and Swedish (mother tongue).

Computer Platforms: Windows, Linux.

Journal Reviews. Acted as a reviewer for: The Cryosphere.

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Education

9/2011–9/2016 **Doctorate Victoria University of Wellington, New Zealand**
Doctoral Thesis Title: *High-Resolution Water Stable Isotope Ice-Core Record: Roosevelt Island, Antarctica.*
Supervisors: Dr. Nancy A. N. Bertler, Prof. James A. Renwick, and Dr. W. Troy Baisden
External Examiners: Dr. Nerillie J. Abram, Australian National University, and Dr. Adrian J. McDonald, University of Canterbury.

9/2007–12/2008 **University of Washington, Seattle, Washington, USA**
Group of Prof. Paul D. Quay, Chemical Oceanography
Key courses from the University of Washington: Global Carbon Cycle and Greenhouse Gases, Atmospheric Chemistry, Climate Extremes, Limnology, Advanced Aquatic Ecology, Lake and Watershed Management, Fluid Dynamics.

9/2002–8/2007 **Master of Science in Engineering, Environmental and Coastal Engineer, Lund's University of Technology (LTH), Sweden**
Master Thesis Title: *Impact of Coastal Erosion and Sedimentation along the Northern Coast of Sinai Peninsula*
Supervisor: Prof. Magnus Larson
Coauthor Ali Mirchi
Examiner Prof. Hans Hanson
In my MSc. thesis work, the predominant coastal processes affecting the erosion of the Sinai northern coastline were established using the GENESIS model (a Fortran based sediment transport numerical model).
Key courses from LTH: Coastal Engineering, Statistics, Fluid Dynamics, Mathematics, Organic and Inorganic Chemistry, GIS Analysis, Aerosols Technology, Ecology, Thermodynamics, Groundwater, and Hydrology and Hydrodynamics.

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Professional Employment

11/2016–3/2017	**Isotope Biogeosciences, National Isotope Centre (NIC), GNS Science, New Zealand** Laboratory Technician
9/2011–9/2016	**National Isotope Centre (NIC), GNS Science, New Zealand** PhD Student Group of Dr. Nancy A. N. Bertler
1/2009–8/2011	**AECOM, Seattle, WA, US** Coastal and Environmental Engineer Group of Jena Gilman P.E. Senior Coastal Engineer *Major Projects:* Coquille River Jetty Condition Evaluation, Bandon, Oregon. *Owner U.S. Army Corps of Engineers* Lower Duwamish Superfund Site, Seattle, Washington. *Owner City of Seattle* Inner Harbor Navigation Channel (IHNC) Hurricane Flood Protection, New Orleans, Louisiana. *Owner U.S. Army Corps of Engineer*
6/2005–9/2007	**Tomelilla Municipality, Sweden** GIS Analyst and Survey Technician

Publications

Emanuelsson, B. D., N. A. N. Bertler, P. D. Neff, J. A. Renwick, B. R. Markle, W. T. Baisden, and E. D. Keller (2018a), The role of Amundsen–Bellingshausen Sea anticyclonic circulation in forcing marine air intrusions into West Antarctica, Clim. Dyn., doi: 10.1007/s00382-018-4097-3.

Emanuelsson, D. (2016), High-Resolution Water Stable Isotope Ice-Core Record: Roosevelt Island, Antarctica: a thesis submitted to the Victoria University of Wellington in fulfilment of the requirements for the degree of Doctor of Philosophy (Geology) / by B. Daniel Emanuelsson., Thesis (Ph.D.)--Victoria University of Wellington, 2016.
http://researcharchive.vuw.ac.nz/bitstream/handle/10063/6699/thesis_access.pdf?sequence=4

Emanuelsson, B. D., W. T. Baisden, N. A. N. Bertler, E. D. Keller, and V. Gkinis (2015), High-resolution continuous-flow analysis setup for water isotopic measurement from ice cores using laser spectroscopy, Atmos. Meas. Tech., 8(7), 2869–2883, doi:10.5194/amt-8-2869-2015.

Tuohy, A., N. Bertler, P. Neff, R. Edwards, D. Emanuelsson, T. Beers, and P. Mayewski (2015), Transport and deposition of heavy metals in the Ross Sea Region, Antarctica, J. Geophys. Res. Atmos., 120(20), 10,11,911-996, doi:10.1002/2015JD023293.

Emanuelsson, B. D., J. Gilman, and J. Orlins (2011), Jetty Condition Evaluation Report for the Coquille River Jetty Condition Evaluation Report for the Coquille River, Prep. U.S. Army Corps Eng., 126.

Emanuelsson, D., A. Mirchi, and M. Larson (2007), Impact of Coastal Erosion and Sedimentation along the Northern Coast of Sinai Peninsula, Lund's University of Technology (LTH).

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In prep.

Emanuelsson, B. D., J. A. Renwick, P. D. Neff, and N. A. N. Bertler (2018b), The Influence of Southern Hemisphere Climate Variability on Water Isotopes from the Roosevelt Island ice core, Antarctica, Preprint. doi:10.6084/m9.figshare.7072664.v1.

Emanuelsson, B. D., P. D. Neff, J. A. Renwick, and N. A. N. Bertler (2018c), The water isotopes (δD) from the Roosevelt Island ice core during the past millennium. In prep.

Manuals

Emanuelsson, D. (2017), Continuous vapor mode LGR manual Measuring water stable isotopes (δD, δ18O, δ17O) using laser spectroscopy. [Research Report] GNS Science. 2017. https://hal.archives-ouvertes.fr/hal-01847099

Field and Lab Work Experience

2012, 2013, and 2014	RICE ice core processing continuous flow analysis (CFA) lab campaigns
11/2012– 1/2013	Roosevelt Island, Antarctica. RICE ice core drilling (0–130 m)
11/2011– 1/2012	Roosevelt Island, Antarctica. RICE ice core drilling (130–760 m)
9/2008	University of Washington's vessel R/V *Thomas G. Thompson*. Research cruise Seattle to Hawaii
1/2002– 3/2002	Yacht Crew Member, Atlantic Ocean and Mediterranean Sea Crossing

Scholarships

9/2011– 9/2015	PhD Rutherford Scholarships (Victoria University of Wellington)
9/2007– 12/2008	Valle Scholarships (University of Washington)

International Conferences

12/2014	AGU conference San Francisco, USA (Poster)
8/2014	Scientific Committee on Antarctic Research (SCAR) conference (Talk)

Memberships in Professional Associations

American Geophysical Union (AGU)

Association of Polar Early Career Scientists (APECS)

Qualifications and Training

Driver's license: US, Sweden and New Zealand

Swedish coastal skipper certificate class VIII