NATALYA GOMEZ

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EDUCATION

2014	Doctor of Philosophy in Earth and Planetary Sciences, Harvard University, Boston, USA
2009	Master of Science in Geophysics and Environmental Studies, University of Toronto, Canada
2006	Bachelor of Science with Honors in Physics Specialist, Math Minor, University of Toronto, Canada

ACADEMIC AND RESEARCH POSITIONS

2021 - Present	Associate Professor, Earth and Planetary Sciences, McGill University, Canada
2015 – Present	Canada Research Chair in Ice Sheet – Sea Level Interactions
2022 - Present	Professor II, Bjerknes Center for Climate Research, University of Bergen, Norway
2015 - 2021	Assistant Professor, Earth and Planetary Sciences, McGill University, Canada
2014 - 2015	Ed Lorenz Postdoctoral Fellow, New York University, USA, Center for Atmosphere and Ocean Science, Courant Institute of Mathematical Sciences

EXPERIENCE

2012 - 2014	Member of the Harvard Graduate Consortium on Energy and the Environment
2012	Energy Policy Analyst for the Government of Aruba
2007-2008	Geophysical Consultant, University of Waterloo, Canada

AWARDS AND HONOURS

2023	Macelwane Medalist from the American Geophysical Union (AGU)
2023	International Union of Geodesy and Geophysics (IUGG) Early Career Award
2021-2022	Delegate to Canada's Science Meets Parliament Program
2020-2022	Trottier Fellow in Science and Public Policy
2020-2025	Tier II Canada Research Chair (renewal)
2019	American Geophysical Union (AGU) Cryosphere Early Career Award
2015-2020	Tier II Canada Research Chair
2010-2013	NSERC PhD Level Post-Graduate Scholarship
2009-2010	NSERC Master's Level Post-Graduate Scholarship

RESEARCH INTERESTS

- Ice sheet sea level solid earth interactions, ice sheet stability and evolution, paleo and future sea level
- Geophysics, geodesy, earth rheology, glacial isostatic adjustment
- Climate science, paleoclimate
- Numerical modeling, remote sensing

• Coastal change mitigation and adaptations

MAJOR GRANTS AND FELLOWSHIPS

Canadian Funding

- NSERC Discovery Grant, Ice Sheets and Sea Level in a Changing Climate, 2023-2028.
- Renewed: Canada Research Chair Tier II in Ice sheet sea level interactions, 2020-2025.
- Trottier Institute for Science and Public Policy Fellowship (TISPP) PI: Gomez (McGill) "A transformatively accessible water level monitoring to inform Canadian coastal adaptation policies" 2020-2023.
- SSHRC Insight Development Grant, Increasing the Adaptive Capacity of Subarctic and Arctic Aboriginal People to Climate and Sea Level Change Using Innovative, Web-Based, Informatics Tools, Co-investigator (PI: Leonard Tsuji, University of Toronto), 2017-2020.
- FRQNT New Researchers Grant, Using GPS-Reflection to detect sea level change associated with glacier retreat in Greenland, 2017-2019.
- NSERC Discovery Grant, Ice Sheet Sea Level Solid Earth Interactions, 2016-2022.
- Canada Research Chair, Tier II, CRC in the Geodynamics of Ice Sheet Sea Level Interactions, 2015-2020.
- Canadian Foundation for Innovation John R. Evans Leaders Fund, Ice Sheet Sea Level Solid Earth Interactions Modeling, 2015-2018.
- McGill University Start-up Funding, 2015-2018.
- CIHR Grant, Increasing the Adaptive Capacity of Subarctic and Arctic Aboriginal People to Environmental Change through Environmental Monitoring, Modelling, and Health Planning: The Use of Innovative, Web-Based, Informatics Tools, Co-investigator (PI: Leonard Tsuji, University of Toronto), 2015-2016.

International Grants

- Norwegian Research Council Grant Climate Narratives: Exchanging local narratives and scientific understanding of climate changes in indigenous communities of Greenland and the southwest Pacific, (PIs: Kerim Hestnes Nisancioglu, University of Bergen, Noway) 2022-2027.
- Research Council of Norway Mobility Grant on polar ice loss and sea level change, Bergen Norway 2022.
- NSF Exploring the New Arctic Grant, Greenland Rising (PI: Robin Bell, Columbia University) 2019-2023.
- European Research Council Starting Grant, Rates of Interglacial Sea-level Change, and Responses, Remote-team member (PI: Natasha Barlow, Leeds University, UK), 2019-2023.
- NSF Polar Research Grant Polenet-ANET: Investigating Ice Sheet Solid Earth Feedbacks in West Antarctica: Implications for ice sheet evolution and stability, International Co-investigator (PI: Terry Wilson, Ohio State University), 2018-2023.
- VILLUM foundation grant and Marie Curie fellowship, EROSIVE: The influence of Earth surface processes on Scandinavian Ice Sheet evolution and collapse, International Collaborator, (PI: Vivi Pedersen, Aarhus University, Denmark), 2018-2023.
- Norwegian Research Council Int. Partnerships for Excellent Education and Research, Advanced Climate Education and Research (ACER), Organizing Team Member, 2018-2020.

TEACHING AND EDUCATIONAL LEADERSHIP EXPERIENCE

Courses taught:

McGill University, Earth and Planetary Sciences

- FSCI 198 Climate Crisis and Climate Actions, Fall 2022, 2023
- EPSC 201 Understanding Planet Earth, Winter 2016, 2017, 2018
- EPSC 510 Geodynamics, Fall 2016, Winter 2019, Winter 2021, Winter 2023
- EPSC 550 Cold Earth Science, Winter 2018
- ESYS 500 Earth System Science Applications Fall 2019, 2020
- EPSC 400 and 700-level independent research and reading courses

Harvard University, Earth and Planetary Sciences Teaching Fellow

- E-PSCI 261 Sea Level Change, Spring 2013
- E-PSCI 205 Geophysics: A Primer, Spring 2012
- SPU 12 Natural Disasters, Fall 2010

University of Toronto, Physics

• Laboratory Teaching Assistant, Fall 2008 – 2009

University of Waterloo & Peetabeck Academy

• Science Outreach Teacher, Summer 2008

Teaching and Learning Resource Contributions:

- <u>"Teaching hope during the climate crisis"</u>, an article by Jeremy Audet about the launch of a new campus-wide course on the climate crisis and climate action at McGill that I was involved in developing and teaching.
- "<u>Peer assessment: Two courses, three peer assessment activities</u>", a McGill Teaching and Learning blog post providing information about peer assessment in my classes.
- "Polling @ McGill", a McGill Teaching and Learning Services resource for instructors containing my advice on in-class polling for active learning.
- <u>"Rethinking the way science is taught"</u>, an article by Fergus Grieve on the Earth and Planetary Sciences Learning Community I was a part of.
- <u>"EPS Learning Community: Exploring our 'write' to learn"</u> and <u>"A.P.O.S.: the 'write' tool for the job"</u>, two McGill blog posts by MSc student in my group, Anna Hayden, on the findings of the Earth and Planetary Sciences Learning Community project.

Educational Leadership Experience:

- Organizer and lecturer for a graduate course on The Ocean and Climate Action as part of the One Ocean Expedition (https://oneoceanexpedition.com/) on board the Statsraad Lehmkuhl Tall Ship in the Caribbean, 2021.
- Organizer and lecturer for Advanced Climate Dynamics Courses (ACDC; https://www.uib.no/en/rs/acdc) international graduate summer school, 2018-present.
- Course development and teaching team for novel university-wide course FSCI198 The Climate Crisis and Climate Actions, McGill Faculty of Science Education Office, 2021-present.
- Guest Lecturer at University of Bergen course on winter fieldwork and climate research (see #icefinse on Twitter and Instagram), 2022.
- EPS Learning Community member to integrate critical writing skills into the Earth Sciences Curriculum, 2018-2019.
- Earth and Planetary Sciences Academic Curriculum Committee, 2018-2019.
- Invited instructor at the Princeton University Atmospheric and Oceanic Sciences workshop on Ice in the Climate System, 2014.

ADVISING

Postdoctoral Researchers:

- Erica Lucas (2023-present), McGill University
- Dr. Maryam Yousefi (2021-present), McGill University
- Dr. Thomas Navarro (2019-present), McGill University
- Dr. N. H. Erik Chan (2016-2019), McGill University

Doctoral Students Supervised:

- B Parazin (starting in September, 2023), McGill University
- Oliver Pollard. (2020-present), Leeds University, Co-supervisor
- David Purnell Ph.D. (2017-2022), McGill University
- Holly Han Ph.D. (2015-2021), McGill University
- Evelyn Powell PhD. (2015-2021), Harvard University, Co-supervisor

Masters Students Supervised:

- Jeremy Roffman (2021-2023), McGill University
- Julia Morales Aguire M.Sc. (2020-2022), McGill University, Co-supervisor
- Jeannette Wan Xiu Wen, M.Sc. (2019-2021), McGill University
- Anna-Mireilla Hayden M.Sc. (2017-2019), McGill University

Undergraduate Students Supervised:

- Eva Clancy, NSERC Undergraduate Summer Research Award (2023), McGill University
- Alexandra Rochon, Trottier Space Institute Summer Undergraduate Research Award (2023), McGill University
- Natasha Kelly, Honours Undergraduate Thesis (2023) McGill University
- Natalie Hardin, (2022), McGill University
- Isabelle Mcintyre, (2021-2022), McGill University
- Jeremy Roffman, (2020-2021), AOS and Physics, McGill University
- Julia Morales, (2020), Geophysics, McGill University
- Tomas Milla-Koch, (2019-present), "Using sediments to reconstruct paleo sea levels." McGill University
- Ingrid Gendron, (2019-present), "Measuring water level changes in St. Lawrence Estuary with GNSS-Reflectometry."
 McGill University
- Linda Pan, (2018-2019), "Spatial variability and impacts of future sea level change." McGill University
- Jeannette Wan Xiu Wen, (2018-2019), McGill University
- Asia Murphy, (2018), "Evaluation of multiple GNSS antennae for sea level monitoring." McGill University
- Morgane Flament, (2018-2019), LaSalle University
- Clovis Vinant-Tang, (2018), Physics Department, "Surface water detection and characterization in Antarctica using satellite images and machine learning algorithms." McGill University
- Gabriel Tseng, (2017-2018), McGill University
- Jake Casselman, (2016-2017), "Global and local sea level projections and coastal adaptation." McGill University
- Katarina Kuhnert, (2016-2017), "Arctic sea level change and community response." McGill University
- Anna-Mireilla Hayden, (2016-2017), "Analysis of Greenland Polenet GIS data." McGill University

PROFESSIONAL SOCIETY MEMBERSHIP

- GEOTOP
- Québec Oceans
- Canadian Geophysical Union
- American Geophysical Union

EDITING AND SOCIETAL SERVICES

- Nature
- Science
- Science Advances
- Nature Geoscience

- Nature Scientific Reports
- Journal of Geophysical Research
- Geophysical Research Letters
- Geoscientific Model Development

ARCTIC

• SCAR • NSERC

OUTREACH

- Climate Narratives talks in Ilulissat, Greenland, August 2023
- Astrobites Earth Week Panelist on Hope and Climate Action, Montreal and online, April 2023
- Panelist on Climate Change in the Caribbean and Pacific Islands, One Ocean Week in Bergen, Norway, April 2023
- Trottier Space Institute Climate Conversations Outreach event, January 2023
- Lecturer and mentor for "Ice Finse (#icefinse on social media)", a field course on ice and climate at Finse Alpine Research Station in Norway, April 2022

NSF

- Lecturer for an international field course on The Ocean and Climate Action on board the Caribbean leg of the One Ocean Expedition, November 2021
- Developed and piloted a new climate outreach event, Climate Conversations Authentic Relating About Our Changing World, October 2021: https://tinyurl.com/wdppfe7v
- Started Research Group Blog in 2021to share about travel experiences, research and other academic activities: https://www.natalyagomez.com/blog
- Science for the Public Lecture on the Long Reach of Polar Glacier Melt, April 2021: http://www.scienceforthepublic.org/earth/the-long-reach-of-polar-glacial-melts
- Over 12,000 Miles Apart, Polar Ice Sheets Will Influence Each Other, The Weather Channel, August 2021: https://weather.com/science/environment/video/over-12000-miles-apart-polar-ice-sheets-will-influence-each-other
- Delegate of Canada's Science Meets Parliament Program, 2021: https://sciencepolicy.ca/programs/science-meets-parliament/smp2023/
- Panelist on Academic Careers at the Undergraduate Women in Physics Canada Conference, January 2021
- The Quirks & Quarks listener question show, CBC Radio, June 2020
- Skype-a-Scientist program connecting researchers with classrooms online, May 2020
- Broad Science storytelling slam co-hosted by Confabulation, Phi Centre, Montreal QC, November 2019
- Lecturer at Advanced Climate Dynamics Courses summer school on The Anthropocene in Yosemite National Park, September 2019
- The science of climate change. Pint of Science Festival, McClean's Pub, Montreal QC, April 2019
- Ice Sheets, sea level and the Solid Earth. AstroMcGill Public Lecture, April 2019
- Women in STEM and Climate Science, Video, 2018 https://youtu.be/uOwZEwOzZro
- Heating H2O: The Chemistry of Sea Level Rise California Academy of Sciences, Video, 2018. https://www.calacademy.org/educators/heating-h2o-the-chemistry-of-sea-level-rise
- Ice, Sea Level and the Solid Earth. SCUGOG Memorial Public Lecture, London, Canada, February 2018
- Earth and Climate Science and Women. Women in Science @McGill and Beyond, March 2018
- Sea Level Change, Ice Sheets and the Solid Earth. Cutting Edge Lectures in Science, Montreal, Canada, February 2016
- The Physics of Ice Sheets, Sea Level and the Solid Earth. Wide Science Festival, Montreal, Canada, May 2016
- Sea Level, Ice and the Solid Earth. McGill Space Institute Jamboree, September 2015
- Ice Sheets and Sea Level Change. McGill Soup and Science, September 2015
- Ice and Sea Level Change. McGill Faculty of Science Meeting, October 2015

SELECT RECENT RESEARCH PRESS COVERAGE

- Sea level rise; rapid and unstoppable unless Paris Agreement targets met, 2022.
- The Greenland Connection by Tony Bartelme, 2021.
- Over 12,000 Miles Apart, Polar Ice Sheets Will Influence Each Other, 2021.
- Researchers examine how world-apart ice sheets influence each other, 2021.
- Ice sheets on the move; how north and south poles connect, 2020.
- Melting ice sheets may cause 'climate chaos' according to new modeling, 2019.
- Could Sea Level Rise to the Steps of the U.S. Capitol? 2019.

INTERNATIONAL RESEARCH COMMUNITY ACTIVITIES

Long term leadership positions:

- Vice Chair of Subcommission 3.4 of the International Association of Geodesy on Cryopheric Deformation, 2019-present.
- Member of the Steering Committee for the development of National sea-level Guidance in Canada, 2022-present.
- Steering Committee Member for the World Climate Research Program (WCRP) "Grand Challenges Sea Level and Coastal Impacts," 2015-2022.
- Organizer and lecturer of Advanced Climate Dynamics Courses (ACDC) international summer schools for graduate students, 2018-present.
- Led monthly international webinar series on Ice Sheets, Sea level and glacial isostatic adjustment, 2021-2022.
- Member of SCAR INStabilities & Thresholds in Antarctica (INSTANT) Scientific Research Programme, 2021-present.
- Steering committee member for PALSEA, 2016-present.
- Steering committee member of the "Solid Earth Response and influence on Cryosphere Evolution (SERCE)" Scientific Research Program of SCAR, 2016-2021.

Short term activities:

- Lecturer at ACDC/GRISO joint summer school in Greenland, August, 2023.
- Chair of Session JG01 Interactions of the Solid Earth With Ice Sheets and Sea Level at the International Union of Geodesy and Geophysics (IUGG) General Assembly, Berlin, July, 2023.
- Convenor of Session 147 Sea-Level, Ice-Sheet, and Earth system evolution: understanding the past to constrain the future at the INQUA, Italy, July 2023.
- Lecturer at Polenet GIA Training School in Sweden, July, 2023.
- Session chair on Ice Sheets and Sea Level Change, WCRP Open Science Conference, Rwanda, October 2023.
- Session chair and organizer at WCRP Sea Level Conference: Advancing Science, Connecting Society, Singapore 2022.
- Contributing author, Intergovernmental Panel on Climate Change (IPCC) 6 th Assessment Report, 2021.
- Theme leader for SCAR INStabilities & Thresholds in Antarctica (INSTANT) Scientific Research Programme Workshop February 16-18, 2021.
- Lecturer at the Advanced Climate Dynamics Course on The Anthropocene in Yosemite National Park, September 2019.
- Session Chair at American Geophysical Union Fall Meeting, San Francisco CA, USA, December 2019.
- Organizer of a Pages Workshop on Glacial Isostatic Adjustment, Ice Sheets and Sea Level Change, Canadian Museum of Nature, Ottawa, Canada, September 2019.
- Lecturer at the Advanced Climate Dynamics Course on Hemispheric Asymmetry in Climate in Norway, September 2018.
- Expert, Structured Expert Judgment (SEJ) Ice Sheet Elicitation and assessment of the future contribution to sea level rise from ice sheets. Washington, DC, USA, January 2018.
- Conference organizing committee member for the International WCRP/IOC Conference on Regional Sea Level Changes and Coastal Impacts, held in New York, NY, USA, sealeyel2017.org, July 2017.
- Workshop Session Chair, International Association of Geodesy (IAG) 1st circular Workshop on Glacial Isostatic Adjustment and Elastic Deformation in Reykjavik, Iceland, September 2017.
- Workshop Presenter and Report Writing Committee for the NSF Future Seismic and Geodetic Facility Needs in the Geosciences, 2014-2015.
- Invited instructor at the Princeton Atmospheric and Oceanic Sciences workshop on Ice in the Climate System, 2014.

McGILL UNIVERSITY ACTIVITIES

- Course development team for FSCI198 The Climate Crisis and Climate Action, 2021-present.
- Faculty of Science Academic Associate of Graduate Education Hiring Committee, 2020.
- Faculty of Sciences Equity and Working Climate Committee, 2018-2021.
- Faculty hiring committee for Geography Department, McGill University, 2020.
- Co-Chair McGill Space Institute Postdoctoral Fellowships Committee, 2018-2019.
- Faculty of Science Equipment Competition review committee, 2018.
- Poster judge, Faculty of Sciences Undergraduate Research Conference, 2016, 2017.
- Research Action Team Member for Vision 2020, McGill's Sustainability Strategy, 2016-present.
- Hosted Nature Magazine's senior editor in the field of climate research for a seminar and visit with the Atmosphere Ocean Sciences, Geography and Earth and Planetary Science Departments.
- Faculty hiring committee for Atmosphere Ocean Sciences Department, McGill University, 2016.
- Presenter at McGill Soup and Science, 2015, 2019.

McGill Department of Earth and Planetary Sciences Activities:

- Graduate Admissions Committee Chair, 2022-present.
- Founder/chair/member of the Equity and Working Climate Committee chair, 2019-present.
- Chair's Advisory Committee, 2017, 2020, 2022-present.
- Wares Postdoctoral Fellowships Committee, 2018-2019, 2023
- Member of Unlearning Racism in the Geosciences (URGE) Pod at McGill, 2021.
- Faculty CRC selection committee member, 2019.
- EPS Learning Community member, 2018-2019.
- Academic Curriculum Committee, 2018-2019.
- Graduate Admissions Committee, 2018, 2019.
- Graduate Scholarship Committee, 2018.
- Departmental Seminar Organizer, 2015-2018.
- EPS Undergraduate recruitment/Outreach Committee, 2016-2018.
- Geobiology Faculty Hiring Search Committee 2016-2017.

PROFESSIONAL PRESENTATIONS

Invited Departmental/Institutional Seminars:

- University of Wisconsin at Madison, March 2023.
- Massachusetts Institute of Technology, February, 2023.
- NASA Goddard Sea Level Seminar online, January 2023.
- Victoria University, BC, Canada, November 2022.
- University of Bergen, Norway, February, 2022.
- University of California Santa Barbara, USA, January, 2022.
- Columbia University, USA, September, 2021.
- Johns Hopkins University, USA, March, 2021.
- Standard University, USA, October 2020.
- University of Quebec, Montreal, Canada, February 2020.
- University of Texas, Austin, USA, April 2019.
- California Institute of Technology, Pasadena, CA, USA, April 2019.
- University of Massachusetts Amherst, Amherst MA, USA, April 2018.
- University of Western Ontario, London, ON, Canada, 2018.
- Annual C. Gordon Winder Memorial SCUGOG Public Lecture in Earth Sciences, 2018.
- Washington University, St. Louis, IL, USA, November 2017.
- Ottawa University, Ottawa, ON, Canada, October 2017.
- Lehigh University, Pennsylvania, USA, March 2017.
- Washington University in Seattle, Washington, February 2017.
- Physics Department, McGill University, Montreal, Canada, September 2016.
- Earth Observatory of Singapore, Singapore, August 2016.
- Atmosphere Ocean Sciences Department, McGill University, Montreal, Canada, November 2015.
- Geophysics Department Seminar Series, Stanford University, California, USA, October 2015.
- IMAU / Utrecht University Colloquium, Netherlands, March 2015.
- Department of Geosciences, Princeton University, Princeton, NJ, USA, March 2014.
- National Center for Atmospheric Research (NCAR), Boulder, CO, USA, June 2014.
- Nonlinear Studies at Alamos National Laboratory, Los Alamos, NM, USA, October 2011.

Invited Conference Presentations:

- IUGG General Assembly Early Career Award lecture, Berlin, Germany, July 2023.
- Keynote Speaker in <u>National Academy of Sciences Community Workshop on Future Directions for Southern Ocean and Antarctic Nearshore and Coastal Research</u>, Washington, DC, USA, February 2023.
- Canadian Antarctic Research Program development workshop, Polar Knowledge Canada, online November 2022.
- Keynote speaker and mentor, Graduate Climate Conference, Park Forest, WA, October 2022.
- SCAR Workshop on The Future of Geodetic-Geophysical Observational Networks in Antarctica, September 2022.
- Ice-Finse Field School seminar, Finse Research Station, Norway, April 2022.
- Climate Narratives Workshop, Bergen, Norway, February 2022.
- One Ocean Expedition Online Climate Action Series, October 2021.
- European Geoscience Union (EGU) meeting online, April 2021.

- PALSEA meeting online, September 2020.
- Quaternary Research conference in Leeds, January 2020.
- Quebec Oceans conference in March 2020.
- Early Career Cryosphere Award talk, AGU Fall Meeting, San Francisco CA, December 2019.
- Ice sheet sea level solid Earth interactions. Glacial Isostatic Adjustment Workshop, Ottawa, Canada, September 2019.
- Ice-sheet/ocean interactions: drivers and impacts. International Conference on Paleoceanography, Sydney, Australia, September 2019.
- INQUA Meeting, Dublin, Ireland, July 2019.
- IUGG General Assembly, Montreal, Canada, July 2019.
- The physics of ice sheets and sea level change in a warming climate. Women in Physics Canada Conference, Montreal, Canada, June 2019.
- Advanced Climate Dynamics Courses 10-year anniversary meeting, Norway, March 2019.
- PALSEA2 5th workshop: Phasing of ice sheet and sea-level responses to past climate change, Cancun, Mexico, November 2017
- Elizabeth and Frederick White Conference on the sensitivity of the Antarctic Ice Sheet to marine climate change: perspectives from the past, Hobart, Australia, July 2017.
- Insights from coupled modeling on ice, sea level and solid Earth changes in Antarctica. International WCRP/IOC Conference on Regional Sea Level Changes and Coastal Impacts, Columbia University, New York, USA, July 2017.
- The Influence of Earth structure on a coupled ice sheet-sea level model of the Antarctic Ice Sheet. SCAR Open Science Conference, Kuala Lumpur, Malaysia, August 2016.
- Sea level Ice Sheet Solid Earth Interactions. Earth, Environmental and Planetary Sciences Colloquium, Brown University, Providence, Rhode Island, USA, November 2015.
- Glacial isostatic adjustment and sea level problems and the types of geodetic and seismological data that will be needed. NSF Future Seismic and Geodetic Facility Needs in the Geosciences Workshop, Washington, DC, USA, May 2015.
- Sea level ice sheet interactions. Mathematics and Climate Research Network Annual Meeting, Chapel Hill, NC, USA, September 2014.
- Princeton University AOS/GFDL Workshop, Princeton, NY, USA, September 2014.
- American Geophysical Union Fall Meeting, San Francisco, California, USA, December 2013.
 The Impact of Gravitationally Self-Consistent Ice Age Sea-Level Variations on the Evolution of the Antarctic Ice Sheet"
- Coupled Ice Sheet Sea Level Model, Applied to Antarctica through the last 40 ky. CLIVAR WGOMD SOP Workshop on Sea Level Rise, Ocean/Ice Sheet, Hobart, Australia, Hobart, Australia, February 2013.
- Stability and Evolution of a Coupled Ice Sheet Sea Level Model. PALSEA workshop on Past, Rapid Changes in Sea Level, Harvard University, Cambridge, MA, USA, August 2011.
- Sea Level as a Stabilizing Factor for Marine Ice Sheets. WCRP Workshop on Regional Sea Level Change, UNESCO Headquarters in Paris, France, February 2011.

Contributed Conference Presentations:

- American Geophysical Union Fall meeting in Chicago, USA, December 2022.
- WCRP Sea Level conference: Advancing Science, Connecting society, Singapore, July 2022.
- PALSEA meeting online, Singapore, July 2022.
- Antarctic Ice Dynamics Amplified by Northern Hemisphere Sea Level Forcing. American Geophysical Union (AGU) Fall Meeting Online, 2020.
- Influence of the Northern Hemisphere on Antarctic Deglaciation. American Geophysical Union (AGU) Fall Meeting in San Francisco, USA, December 2018.
- The influence of Northern Hemisphere ice loss on Antarctic ice dynamics during the Last Deglaciation. Polar 2018: SCAR/IOC Open Science Conference in Davos, Switzerland, June 2018.
- Interactions of ice sheet evolution, sea level and GIA in a region of complex Earth structure. American Geophysical Union (AGU) Fall Meeting in San Francisco, USA, December 2017.
- The influence of 3-D Earth Structure on a Coupled Antarctic Ice Sheet Sea Model. Oral Presentation at the American Geophysical Union (AGU) Fall Meeting in San Francisco, CA, USA, December 2016.
- Influence of Earth structure on the contribution of the Antarctic ice sheet to sea level change. PALSEA2 2016 Workshop: Sea level budgets at decadal to millennial time scales to bridge the paleo and instrumental records. Timberline Lodge, Mount Hood, Oregon, USA, September 2016.
- WCRP GC Steering Team Meeting on Regional Sea Level Change and Coastal Impacts, Paris, France, June 2016.
- An Integrated Approach to paleo timescale sea level estimates. WCRP GC Steering Team Meeting on Regional Sea Level Change and Coastal Impacts, New York University, New York NY, USA, February 2016.

- Coupled Ice Sheet Sea Level Modeling, Applied to Model Antarctic Ice Sheet Retreat. 2nd Annual PLIOMAX Meeting, Harvard University, Cambridge, MA, USA, January 2016.
- Paleo timescale sea level change. WCRP GC Steering Team Meeting on Regional Sea Level Change and Coastal Impacts, Utrecht, Netherlands, March 2015.
- The Influence of Earth structure on a coupled ice sheet-sea level model of the Antarctic Ice Sheet. American Geophysical Union Fall Meeting, San Francisco, CA, USA, December 2014.
- The influence of sea-level changes on ice-sheet evolution in Antarctica. West Antarctic Ice Sheet Initiative (WAIS) Workshop, Julian, CA, USA, September 2014.
- Sea level change and ice sheet sea level interactions. Center for Sea-Level Change (CSLC) 3rd Annual Workshop, NYU Abu Dhabi, UAE, May 2014.
- Coupled Ice Sheet Sea Level Model, Applied to Antarctica Through the last 40 ky. IAG International Symposium: Reconciling Observations and Models of Elastic and Viscoelastic Deformation due to Ice Mass Change, Ilulissat, Greenland, June 2013.
- Sea Level Predictions of the SeaRISE Ice Sheet Model Simulations. American Geophysical Union Fall Meeting, San Francisco, CA, USA, December 2012.
- Evolution of a Coupled Ice Sheet Sea Level Model. European Geosciences Union Spring Meeting, Vienna, Austria, April 2012.
- Evolution of a Coupled Ice Sheet Sea Level Model. American Geophysical Union Fall Meeting, San Francisco, CA, USA, December 2011.
- Sea Level as a Stabilizing Factor for Marine Ice Sheets. American Geophysical Union Fall Meeting, San Francisco, CA, USA, December 2010.
- Sea Level Change and the Stability of Marine Ice Sheets. ACDC Summer School on Ice Sheet Ocean Interactions, MIT FabLab in Lyngen, Norway, June 2010.
- The Sensitivity of Sea-Level Fingerprints to the Geometry of Ice Sheet Mass Balance. American Geophysical Union Fall Meeting, San Francisco, CA, USA, December 2009

PUBLICATIONS

Note: **Bold & underlined** indicates a student/postdoc under Gomez's supervision.

- 1. **Roffman, J., Gomez, N., Han, H.K., Yousefi, M.** and Nowicki, S. (2023). Spatial and temporal variability of twenty-first century sea-level changes. Geophys. J. Int.. 235, 1, 342-352. https://doi.org/10.1093/gii/ggad170
- 2. Pollard, O., Barlow, N.L.M., Gregoire, L., Gomez, N., Cartell, V., Ely, J.C. and Astfalck, L.C.. (accepted) Quantifying the Uncertainty in the Eurasian Ice-Sheet Geometry at the penultimate Glacial Maximum (Marine Isotope Stage 6). The Cryosphere. preprint: https://doi.org/10.5194/tc-2023-5
- 3. Jungdal-Olesen, K., Pedersen, V. K., Andersen J. L., **Gomez, N.,** Mitrovica, J. X. (2023). Sea level response to late pliocene-quaternary erosion and deposition in scandinavia. Quaternary Science Reviews 301. https://doi.org/10.1016/j.quascirev.2022.107938
- 4. Sadai, S., Spector, R. A., DeConto, R. and **Gomez, N.** (2022). The Paris Agreement and Climate Justice: Inequitable Impacts of Sea Level Rise Associated With Temperature Targets. Earth's Future 10, 12 e2022EF002940 http://doi.org/10.1029/2022EF002940
- 5. Yousefi, M., Wan, J., Pan, L., Gomez, N., Latychev, K., Mitrovica, J.X., Pollard, D. and DeConto, R. (2022). The influence of the solid Earth on the contribution of marine sections of the Antarctic ice sheet to future sea-level change. *Geophys. Res. Let.*. 49, 15, e2021GL097525. https://doi.org/10.1029/2021GL097525
- 6. <u>Navarro, T., Cowan, N., Merlis, T. and Gomez, N. (2022)</u> Atmospheric gravitational tides of Earth-like planets orbiting low-mass stars. Planet. Sci. J. 3 162. <u>https://iopscience.iop.org/article/10.3847/PSJ/ac76cd</u>
- 7. Wan, J.X.W., Gomez, N., Latychev, K., Han, H.K. (2022) Resolving glacial isostatic adjustment GIA in response to modern and future ice loss at marine grounding lines in West Antarctica. *The Cryosphere* 16, 2203–2223. doi.org/10.5194/tc-16-2203-2022
- 8. <u>Han, H. K., Gomez, N.,</u> and <u>Wan, J. X. W.</u> (2022) Capturing the Interactions Between Ice Sheets, Sea Level and the Solid Earth on a Range of Timescales: A new "time window" algorithm, *Geosci. Model Dev. Discuss*, 15, 1255-1373. https://doi.org/10.5194/gmd-2021-126
- 9. Powell, E., Latychev, K., Gomez, N. and Mitrovica, J.X. (2022) The robustness of geodetically-derived 1-D Antarctic viscosity models in the presence of complex 3-D viscoelastic Earth structure. Geophys. J. Int.. ggac129, https://doi.org/10.1093/gji/ggac129

- 10. <u>Powell, E., Pan, L.</u>, Hoggard, M., Latychev, K., Gomez, N., Austermann, J. & Mitrovica, J.X. (2021). The impact of 3-D Earth structure on far-field sea level following interglacial West Antarctic Ice Sheet collapse. *Quaternary Science Reviews*, 273, 107256. https://doi.org/10.1016/j.quascirev.2021.107256
- 11. **Purnell, D. J., Gomez, N.**, Minarik, W. and Porter, D. (2021). Precise water level measurements using low-cost GNSS antenna arrays. *Earth Surf.Dynam*, *9*, 673-685. https://doi.org/10.5194/esurf-9-673-2021
- 12. Pan, L., Powell, E. M., Latychev, K., Mitrovica, J.X., Creveling, J.R., Gomez, N., Hoggard, M.J. and Clark, P.U.. Rapid post-glacial rebound amplifies global sea-level rise following West Antarctic ice sheet collapse. *Science Advances*, 7 (18), eabf7787.
- DeConto, R. M., Pollard, D., Alley, R. B., Velicogna, I., Gasson, E., Gomez, N., Rogstad, S., Condron, A., Gilford, D. M., Ashe, E. L. and Kopp, R. E. (2021) The Paris Climate Agreement and future sea level rise from Antarctica. *Nature*, 593, 83-89.
- 14. <u>Han, H., Gomez, N., Pollard, D. and DeConto, R. (2021) Modeling Northern Hemisphere ice sheet dynamics, sea level change and solid Earth deformation throughout the last glacial cycle. *Journal of Geophysical Research: Earth Surface*, 126, e2020JF006040. https://doi.org/10.1029/2020JF006040</u>
- 15. **Gomez, N.,** Weber, M., Clark, P.U., Mitrovica, J.X. and <u>Han, H.</u> Interhemispheric sea-level forcing on Antarctic Ice Sheet stability during the last Ice Age. (2020) *Nature*. doi: 10.1038/s41586-020-2916-2
- Hayden, A. M., Gomez, N., Wilmes, S.B., Green, J.A.M., Pan, L., Han, H., & Golledge, N.R. (2020) Multi-century impacts of ice sheet retreat on sea level and tides in Hudson Bay. *Journal of Geophysical Research: Oceans*, 125, e2019JC015104. https://doi.org/10.1029/2019JC015104
- 17. Noble, T. L., McCormack, F. S, Rohling, E. J., Aitken, A. R. A., Bostock, H. C., Chase, Z., **Gomez, N.**, Jong L. M., King, M. A., Mackintosh, A. N., McKay, R. M, Menviel, L., Phipps, S. J., Fogwill, C. J., Gayen, B., Golledge, N. R., Gwyther, D. E., McC. Hogg, A., Martos, Y. M., Pena-Molino, B., Roberts, J., van de Flierdt, T., Weber, M. E., Williams T. (2020) The sensitivity of the Antarctic Ice Sheet to a changing climate: Past, present and future. *Reviews of Geophysics*. Published online: https://doi.org/10.1029/2019RG000663.
- 18. Purnell, D.J., Gomez, N., Chan, N.H., Strandberg, J., Holland, D.H. and Hobiger, T. (2020) Quantifying the uncertainty in ground-based GNSS-Reflectometry sea level measurements. IEEE *Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS*). doi:10.1109/JSTARS.2020.3010413.
- Lane, T., Paasche, O, Kvisvik, B., Adamson, K., Rodes, A., Patton, H., Gomez, N., Gheorghiu, D., Baake, & Hubbard, A. (2020) Elevation changes of the Fennoscandian Ice Sheet during the last deglaciation. *Geophys. Res. Lett.* doi: https://doi.org/10.1029/2020GL088796
- 20. **Powell, E., Gomez, N.**, Hay, C., & Mitrovica, J.X. (2020) Viscous Effects in the Solid Earth Response to modern Antarctic ice mass flux: Implications for geodetic studies of WAIS stability in a warming world. *Journal of Climate*, 33, no. 2: 443-459.
- 21. Gregory, J. M., Griffies, S. M., Hughes, C. W., Lowe, J. A., Church, J. A., Fukimori, I., **Gomez, N.**, Kopp, R. E., Landerer, F., Cozannet, G. L., Ponte, R. M., Stammer, D., Tamisiea, M. E. & Van De Wal, R. S. W. (2019). Concepts and Terminology for Sea Level: Mean, Variability and Change, Both Local and Global. *Surveys in Geophysics*. doi: 10.1007/s10712-019-09525-z
- 22. Golledge, N. R., Keller, E. D., **Gomez, N.**, Naughten, K. A., Bernales, J., Trusel, L. D., & Edwards, T. L. (2019). Global environmental consequences of twenty-first-century ice-sheet melt. *Nature*, 566 (7742), 65-72. doi:10.1038/s41586-019-0889-9
- 23. Whitehouse, P. L., **Gomez, N.**, King, M. A., & Wiens, D. A. (2019). Solid Earth change and the evolution of the Antarctic Ice Sheet. *Nature Communications*, 10(1), 503. doi:10.1038/s41467-018-08068-y
- 24. Pollard, D., **Gomez, N.**, DeConto, R. M., & <u>Han, H. K.</u> (2018). Estimating Modern Elevations of Pliocene Shorelines Using a Coupled Ice Sheet-Earth-Sea Level Model. *Journal of Geophysical Research: Earth Surface, 123*(9), 2279-2291. doi:10.1029/2018JF004745
- 25. <u>Chan, N.-H.</u>, Perron, J. T., Mitrovica, J. X., & Gomez, N. (2018). New Evidence of an Ancient Martian Ocean From the Global Distribution of Valley Networks. *Journal of Geophysical Research: Planets, 123*(8), 2138-2150. doi:10.1029/2018JE005536
- Gomez, N., Latychev, K., & Pollard, D. (2018). A Coupled Ice Sheet–Sea Level Model Incorporating 3D Earth Structure: Variations in Antarctica during the Last Deglacial Retreat. *Journal of Climate*, 31(10), 4041-4054. doi:10.1175/JCLI-D-17-0352.1
- 27. Han, H. K., & Gomez, N. (2018). The impact of water loading on postglacial decay times in Hudson Bay. Earth and Planetary Science Letters, 489, 156-165. doi:10.1016/j.epsl.2018.02.043
- 28. Wilmes, S.-B., Green, J. A. M., **Gomez, N.**, Rippeth, T. P., & Lau, H. (2017). Global Tidal Impacts of Large-Scale Ice Sheet Collapses. *Journal of Geophysical Research: Oceans, 122*(11), 8354-8370. doi:10.1002/2017JC013109

- 29. Pollard, D., **Gomez, N.**, & Deconto, R. M. (2017). Variations of the Antarctic Ice Sheet in a Coupled Ice Sheet-Earth-Sea Level Model: Sensitivity to Viscoelastic Earth Properties. *Journal of Geophysical Research: Earth Surface*, 122(11), 2124-2138. doi:10.1002/2017JF004371
- 30. Hay, C. C., Lau, H. C. P., **Gomez, N.**, Austermann, J., **Powell, E.**, Mitrovica, J. X., Latychev, K., Wiens, D. A. (2017). Sea Level Fingerprints in a Region of Complex Earth Structure: The Case of WAIS. *Journal of Climate, 30*(6), 1881-1892. doi:10.1175/JCLI-D-16-0388.1
- 31. Tsuji, L. J. S., Daradich, A., **Gomez, N.**, Hay, C., & Mitrovica, J. X. (2016). Sea Level Change in the Western James Bay Region of Subarctic Ontario: Emergent Land and Implications for Treaty No. 9. *Arctic*, 69(1), 99. doi:10.14430/arctic4542
- 32. Gomez, N. (2015). Small glacier has big effect on sea-level rise. Nature, 526, 510. doi:10.1038/526510a
- 33. **Gomez, N.,** Pollard, D., & Holland, D. (2015). Sea-level feedback lowers projections of future Antarctic Ice-Sheet mass loss. *Nature Communications*, *6*, 8798. doi:10.1038/ncomms9798
- 34. **Gomez, N.**, Gregoire, L. J., Mitrovica, J. X., & Payne, A. J. (2015). Laurentide-Cordilleran Ice Sheet saddle collapse as a contribution to meltwater pulse 1A. *Geophysical Research Letters*, 42(10), 3954-3962. doi:10.1002/2015GL063960
- 35. Hay, C., Mitrovica, J. X., **Gomez, N.**, Creveling, J. R., Austermann, J., & E. Kopp, R. (2014). The sea-level fingerprints of ice-sheet collapse during interglacial periods. *Quaternary Science Reviews*, 87, 60-69. doi:10.1016/j.quascirev.2013.12.022
- 36. **Gomez, N.**, Pollard, D., & Mitrovica, J. X. (2013). A 3-D coupled ice sheet sea level model applied to Antarctica through the last 40 ky. *Earth and Planetary Science Letters*, 384, 88-99. doi: 10.1016/j.epsl.2013.09.042
- 37. **Gomez, N.**, Pollard, D., Mitrovica, J. X., Huybers, P., & Clark, P. U. (2012). Evolution of a coupled marine ice sheet–sea level model. *Journal of Geophysical Research: Earth Surface*, 117(F1). doi:10.1029/2011JF002128
- 38. Mitrovica, J. X., **Gomez, N.**, Morrow, E., Hay, C., Latychev, K., & Tamisiea, M. E. (2011). On the robustness of predictions of sea level fingerprints. *Geophysical Journal International*, *187*(2), 729-742. Geophysical Journal International. doi:10.1111/j.1365-246X.2011.05090.x
- 39. Karagatzides, J. D., Kozlovic, D. R., De Iuliis, G., Liberda, E. N., General, Z., Liedtke, J., McCarthy, D.D., **Gomez, N.**, Metatawabin, D., & Tsuji, L. J. S. (2011). Youth Environmental Science Outreach in the Mushkegowuk Territory of Subarctic Ontario, Canada. *Applied Environmental Education & Communication*, 10(4), 201-210. doi:10.1080/1533015X.2011.669684
- 40. **Gomez, N.**, Mitrovica, J. X., Huybers, P., & Clark, P. U. (2010). Sea level as a stabilizing factor for marine-ice-sheet grounding lines. *Nature Geoscience*, *3*, 850. doi:10.1038/ngeo1012
- 41. **Gomez, N.**, Mitrovica, J. X., Tamisiea, M. E., & Clark, P. U. (2010). A new projection of sea level change in response to collapse of marine sectors of the Antarctic Ice Sheet. *Geophysical Journal International*, 180(2), 623-634. doi:10.1111/j.1365-246X.2009.04419.
- 42. Matsuyama, I., Mitrovica, J. X., Daradich, A., & **Gomez, N.** (2010). The rotational stability of a triaxial ice-age Earth. *Journal of Geophysical Research: Solid Earth, 115*(B5). doi:10.1029/2009JB006564
- 43. PALSEA (2010). The sea-level conundrum: case studies from palaeo-archives. Journal of Quaternary Science, 25, 1, 19-25. https://doi.org/10.1002/jqs.1270
- 44. Mitrovica, J. X., **Gomez, N.**, & Clark, P. U. (2009). The Sea-Level Fingerprint of West Antarctic Collapse. *Science*, 323(5915), 753. doi:10.1126/science.1166510
- 45. Tsuji, L. J. S., **Gomez, N.**, Mitrovica, J. X., & Kendall, R. (2009). Post-Glacial Isostatic Adjustment and Global Warming in Subarctic Canada: Implications for Islands of the James Bay Region. *Arctic*, *62*(4), 458-467. doi:10.14430/arctic176

Other Publications:

- 1. GNSS-Reflectometry Sea Level Observation Data Processing Tools and codes associated with David
- 2. Purnell's thesis: https://github.com/purnelldj
- 3. Article on climate change published in *The Sandbox: Stories of Sustainability at McGill University*. "Faculty Feature: Natalya Gomez" (2017) Published online.
- 4. Conference Proceedings (daily highlights and conference statement) from the International WCRP/IOC Conference on Regional Sea Level Changes and Coastal Impacts, Columbia University, New York, NY, USA (July 10-14, 2017). Published online. Gomez was the author of Day 4 highlights and contributed to editing the conference statement.
- 5. WCRP Grand Challenge: Regional Sea Level Change and Coastal Impacts Science and Implementation Plan (Version 2.1). Co-authored by the GC Sea Level Steering Team. Working document published <u>online</u>. Gomez led and wrote the implementation plan for Work Package 1 (WP1) of the GC with Mark Tamisiea and Roderik Van de Wal.
- 6. Future Geophysical Facilities Required to Address Grand Challenges in Earth Sciences: A community report to the National Science Foundation, Published online. (September 2015).

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- 7. Meredith Langstaff, **Natalya Gomez.** (2012). Intermittent Renewable Electricity: Incentivizing Load Management Technologies in Aruba. 55. Aruban Government, Carbon War Room, Harvard University