

## LARRY A. MAYER

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Professor and Director

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LARRY MAYER is a Professor and the Director of the Center for Coastal and Ocean Mapping at the University of New Hampshire. He graduated magna cum laude with an Honors degree in Geology from the University of Rhode Island in 1973 and received a Ph.D. from the Scripps Institution of Oceanography in Marine Geophysics in 1979. At Scripps, he worked with the Marine Physical Laboratory's Deep-Tow Geophysical package, applying this sophisticated acoustic sensor to problems of deep-sea mapping and the history of climate. After being selected as an astronaut candidate finalist for NASA's first class of mission specialists, Larry went on to a Post-Doc at the School of Oceanography at the University of Rhode Island where he worked on the early development of the Chirp Sonar and problems of deep-sea sediment transport and paleoceanography. In 1982, he became an Assistant Professor in the Dept. of Oceanography at Dalhousie University and in 1991 moved to the University of New Brunswick to take up the NSERC Industrial Research Chair in Ocean Mapping. In 2000 Larry became the founding director of the Center for Coastal and Ocean Mapping at the University of New Hampshire and the co-director of the NOAA/UNH Joint Hydrographic Center.

Larry has participated in more than 95 cruises (over 75 months at sea!) over the last 45 years and has been chief or co-chief scientist of numerous expeditions, including two legs of the Ocean Drilling Program and thirteen expeditions in the ice-covered regions of the high Arctic. He has served on, or chaired, far too many international panels and committees and has the requisite large number of publications on a variety of topics in marine geology and geophysics. He is the recipient of the Keen Medal for Marine Geology, an Honorary Doctorate from the University of Stockholm and was a member of the President's Panel on Ocean Exploration, the National Science Foundation's Advisory Committee for the Geosciences, and chaired a National Academy of Science Committee on national needs for coastal mapping and charting as well as the National Academies study on the impact of the Deepwater Horizon Spill. He was the co-chair of the NOAA's Ocean Exploration Advisory Working Group, and the Vice-Chair of the Consortium of Ocean Leadership's Board of Trustees and chaired the NAS's Oceans Studies Board for six years. He also chairs the MARUM Science Advisory Board and is a member of the State Dept.'s Extended Continental Shelf Task Force and the Navy's SCICEX Advisory Committee. Larry was appointed by President Obama to the Arctic Research Commission and in 2017 was elected to the Hydrographic Society of America Hall of Fame. In 2018, he was elected as a member of the National Academy of Engineering, and, in 2019, was elected as a foreign member in the Royal Swedish Academy of Sciences. In 2020, Larry was the first recipient of the Walter Munk Medal from The Oceanography Society and named a Fellow of the American Geophysical Union. In 2021 he was elected to the Norwegian Scientific Academy for Polar Research and in 2022, he received the Sam Masry Prize from the Canadian Hydrographic Association for outstanding contributions to the hydrographic profession and its related disciplines.

Larry's current research deals with increasing the efficiency and effectiveness of seafloor mapping and remote characterization of the seafloor (applications of autonomous vehicles) as well as advanced applications of 3-D visualization to ocean mapping problems and applications of mapping to Law of the Sea issues, particularly in the Arctic.

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### Education

1979 Ph.D. Scripps Institution of Oceanography, University of California, San Diego,  
Marine Geology/Geophysics.

1973 B.S. University of Rhode Island, magna cum laude,  
Honors program Geology.

### Work Experience

2014-2019 Founding Director, School of Marine Science and Ocean Engineering, UNH

2004 - Adjunct Scientist – Woods Hole Oceanographic Institution

2000 - Professor and Director of Center for Coastal and Ocean Mapping  
University of New Hampshire, Durham, New Hampshire

1991-99 Professor and NSERC Chair in Ocean Mapping  
Department of Geodesy and Geomatics Engineering, University of New Brunswick

1988-89 Visiting Professor, Department de Geologie Dynamique, University of Paris.

1986-91 Associate Professor of Oceanography,  
Department of Oceanography, Dalhousie University.

1986 Visiting Professor Chair, University of Kiel, W. Germany.

1982-86 Assistant Professor of Oceanography,  
Department of Oceanography, Dalhousie University.

1980- Adjunct Professor of Ocean Engineering,  
Department of Ocean Engineering, University of Rhode Island.

1980-82 Assistant Marine Scientist, Graduate School of Oceanography,  
University of Rhode Island.

1979-80 Post-doctoral Research Associate, Graduate School of Oceanography,  
University of Rhode Island.

1979 Post-doctoral Research Associate, Marine Physical Lab,  
Scripps Institution of Oceanography

1974-79 Research Assistant, Marine Physical Lab,  
Scripps Institution of Oceanography

## Professional Societies

American Geophysical Union, Oceanography Society, The Hydrographic Society

## Honors and Awards

Distinguished Alumni Keynote Speaker for the Scripps Graduate Commencement -2023

Sam Masry Prize – Canadian Hydrographic Association – 2022

Elected Member of the Norwegian Scientific Academy of Polar Research 2021

Elected Fellow of the American Geophysical Union, 2020

First Recipient of the Walter Munk Medal by The Oceanography Society, 2020

*Geosciences* 10th Anniversary Best Paper Award – Best paper 2011-2021

Distinguished Alumni Award University of Rhode Island – College of Environmental and Life Sciences, 2019

Elected as Foreign Member, Royal Swedish Academy of Sciences, Class for Geosciences 2019

Co-chair, Session on Ocean Exploration and Mapping, White House Summit on Ocean Science and Technology, 2019

Elected to the U.S. National Academy of Engineering, Class of 2018

Elected to The Hydrographic Society of America Hall of Fame, Class of 2017

Presidential Appointment to Arctic Research Commission 2016-2021

Chair, National Academies of Sciences Ocean Studies Board 2015-2021

Superior Honor Award, Department of State, 2013

Class of 1944 Professorship, University of New Hampshire, 2013–2016

Vice-Chair, Consortium of Ocean Leadership Board of Trustees, 2013–2015

Chair, National Academy of Sciences Committee on Effects of Deepwater Horizon Spill on Ecosystem Services in the Gulf of Mexico, 2011–2014

Trustee, Consortium of Ocean Leadership, 2009–2012

Distinguished Alumni Award University of Rhode Island – School of Oceanography, 2007

University of New Hampshire Excellence in Research Award, 2007

Chair, National Academies Committee on National Needs for Coastal Mapping and Charting, 2003-2004

Member of U.S. Presidential Panel on Ocean Exploration, 2000

Doctor of Philosophy, *honoris causa*, University of Stockholm, 1999

Geological Association of Canada's Michael J. Keen Medal for contributions to marine geoscience, 1998

Petermann Medal for Paleoceanography (Bronze) in Awarded by the Swedish Royal Academy of Sciences - 1997

President, Canadian Geophysical Union, 1997–1999  
Member, Minister of Natural Resources Canada National Advisory Board for Earth Science, 1996–1999  
Member, Board of Directors Ocean Networks Canada, 2012–2021  
Member, Board of Directors, Canadian Scientific Submersible Facility, 1993–2000  
Member, Board of Directors, ISOTRACE Laboratories, Toronto, 1993–1997  
Member, Board of Directors, Institute of Acoustics of Atlantic Canada, 1994–1997  
Member, Board of Directors, Champlain Institute, 1996–1997  
Vice President, Board of Directors, Atlantic Center for Remote Sensing of the Oceans 1993  
Lansdowne Visiting Appointment, University of Victoria, 1991–1992  
CONOCO Distinguished Lecturer, Woods Hole Oceanographic Institute, May 1987  
Kiel University Visiting Professor Chair, 1986  
Scripps Institution of Oceanography Dissertation Fellowship  
Selected as Astronaut Candidate finalist for the NASA Space Shuttle Program  
Phi Kappa Phi Honor Society  
N.Y. State Regents Scholarship

## **Committee Memberships**

### **International**

Chair, Scientific Board, Research Center on Ocean Margins, Bremen Germany, Member, 2006–  
Applied Technology Councilor – Oceanography Society, 2020–  
Herzberg Medal Selection Committee, Natural Sciences and Engineering Research Council of Canada, Member, 2010  
International Review Committee, Natural Sciences and Engineering Research Council of Canada, Member, 2007  
Data Management Task Force, Integrated Ocean Drilling Program, Member 2006  
Scientific Planning and Policy Oversight Committee of the Integrated Ocean Drilling Program, Member, 2003–2005  
Scientific Planning Committee, Ocean Drilling Program and Integrated Drilling Program (Interim), Member, 2000–2003  
Inter-Union Commission on the Lithosphere—Arctic, Geology\Geophysics W.G., Member  
Executive of the Organizing Committee for the Conference on the Scientific Objectives of Ocean Drilling Beyond, 2003  
IUGS Task Group on Global Changes, WG1, Member  
Executive Committee of the Ocean Drilling Program, Member, 1994–1998

US National Science Foundation Academic Fleet Review Committee, 1999  
American Geophysical Union, Committee on Education & Human Resources, Member, 1993–1998  
GEBCO, Scientific Advisor  
SCOR WG 100, Member  
Walter Munk Award Selection Committee, Member  
Nansen Arctic Drilling Program Scientific Committee, Chairman, 1993–1996  
Sediments and Ocean History Panel, Ocean Drilling Program, Chairman, 1987–1989  
USAC Workshop on Sealevel, Deep-sea Working Group, Co-chairman, 1989  
American Geophysical Union Committee on Paleoceanography, Member, 1990–1993

### **National**

Chair, U.S. National Committee on the Decade of Ocean Science 2020-  
Chair, National Academies of Sciences Ocean Studies Board, 2015–2021  
Arctic Research Commission, Commissioner 2016-2021  
Ocean Research Advisory Panel (ORAP), Member  
NOAA Hydrographic Services Review Panel, Member  
Ocean Exploration Trust Board of Trustees, Vice-chair  
Interagency Task Force on the Extended Continental Shelf, Member  
National Geographic OCEANUS TV Series, Board of Advisors 2013  
UNOLS Arctic Icebreaker Coordinating Committee, Member – 2010-2015  
NOAA Ocean Exploration Advisory Working Group, Co-chair, 2008–2014  
National Academy of Sciences Committee on Effects of Deepwater Horizon Spill on Ecosystem Services in the Gulf of Mexico, Chair, 2011–2013  
Joint Analysis Group, Deepwater Horizon, Member, 2011  
OOI Program Advisory Committee, Member, 2010–2013  
ORION Cyberinfrastructure Committee, Chair, 2002-2006  
National Science Foundation Geosciences Directorate Advisory Committee, 2004–2006  
NSF Ocean Sciences Subcommittee, AC/GEO, Chair 2004–2006  
NSF, EWING Replacement Review Committee - 2005  
NSF, Ocean Information Technology Working Group - 2007  
NOAA, Conversion of the USNS CAPABLE, Requirements Working Group - 2006  
National Academy of Sciences Committee on National Needs for Coastal Mapping and Charting, Chair, 2002–2004

President's Ocean Exploration Panel—A panel on ocean exploration reporting to the President of the United States, Member, 2000–2003

Minister of Natural Resources Canada National Advisory Board for Earth Sciences, 1996–2000

Natural Sciences and Engineering Council's Committee on Research

NSERC Group Chair, Solid Earth Science, Environmental Earth Science, Interdisciplinary Committees, 1997–2000

Canadian Council for ODP, Chairman, 1994–1998

Royal Society of Canada's Global Change Program (CGCP), Working Group on Marine-Atmospheric Interactions, Member

Marine Geoscience Committee of the Canadian Geoscience Council, Executive Member

Scientific Advisory Committee, Marine Science Workshop

NSERC Strategic Grant Selection Panel, Member 1993–1996

NACOM—National Action Committee for Ocean Mapping, Invited Member

Canadian Planning Committee for ODP, Member, 1988–1991

NSERC Ad Hoc Committee on Research Vessels, Chairman 1992–1993

Canadian National Programme for JGOFS, Working Group on Paleoceanography and Paleoclimate, Co-chair

## **Cruise Participation**

Participated in more than 90 cruises (over 70 months at sea!) over the last 35 years; have been chief or co-chief scientist of numerous expeditions including two legs of the Ocean Drilling Program, and nine mapping expeditions in the ice-covered regions of the high Arctic.

## **Reviewed Publications**

Ware, C., Mayer, L.A., and Johnson, P., 2023, BathyGlobe GapFiller: A Planning Tool to Help fill the Gaps in World Bathymetry, *International Hydrographic Review*, Vol. 29, no. 2, pp. 16-27. <https://doi.org/10.58440/ihr-29-2-a19>

Jakobsson, M. and Mayer, L.A., 2023, Mapping Northern Greenland Waters: A Blank Spot on Nautical Charts in Ice-Infested Waters, *Hydro International*, Vol. 27, no. 3, pp. 17-21. <https://www.hydro-international.com/content/article/mapping-northern-greenland-waters>

Di Stefano, M., Gonzaliz Mirelis, G., and Mayer, L., 2023, Groundtruther: A QGIS plug-in for seafloor characterization, *Environmental Modelling and Software*, Available on line: 25 October, 2023, <https://doi.org/10.1016/j.envsoft.2023.105861>

Mayer, L., 2023, Uncrewed Surface Systems Facilitating a New Era of Global Ocean Exploration, Keynote Article, *International Hydrographic Review*, Vol. 29, no. 1, <https://ihr.iho.int/articles/uncrewed-surface-systems-facilitating-a-new-era-of-global-ocean-exploration/>

Mayer, L., 2023, Uncrewed Surface Systems Facilitating a New Era of Global Ocean Exploration, Keynote Article, *International Hydrographic Review*, Vol. 29, no. 1. <https://ihr.iho.int/articles/uncrewed-surface-systems-facilitating-a-new-era-of-global-ocean-exploration/>

Dorschel, B., Hehemann, L., Viquerat, S. *et al.*, 2022, The International Bathymetric Chart of the Southern Ocean Version 2. *Sci Data* **9**, 275 <https://doi.org/10.1038/s41597-022-01366-7>

Jakobsson, M. and Mayer, L.A., 2022, Polar Region Bathymetry: Critical knowledge for the prediction of global sea level rise, *Frontiers in Marine Science*, <https://doi.org/10.3389/fmars.2021.788724>

Dijkstra, J., Mello, K., Waitling L., Mayer. L.A. 2021, Fine-scale mapping of deep-sea habitat-forming species densities reveals taxonomic specific environmental drivers, *Global Ecology and Biogeography*, v. 30, no. 6, pp. 1286-1298, <https://doi.org/10.1111/geb.13285>

Kates Varghese, H., Lowell, K., Miksis-Olds J., DiMarzio N, Moretti D. and Mayer L.A., 2021, Spatial Analysis of Beaked Whale Foraging During Two 12 kHz Multibeam Echosounder Surveys. *Frontiers in Marine Science*, 8:654184. doi: 10.3389/fmars.2021.654184, <https://www.frontiersin.org/articles/10.3389/fmars.2021.654184/full>

Mello-Rafter K, Sowers D, Malik M, Watling L, Mayer L.A. and Dijkstra J.A., 2021, Environmental and Geomorphological Effects on the Distribution of Deep-Sea Canyon and Seamount Communities in the Northwest Atlantic. *Frontiers in Marine Science*, 8:691668. doi: 10.3389/fmars.2021.691668 <https://www.frontiersin.org/articles/10.3389/fmars.2021.691668/full>

Mayer, L.A., and Roach, Ashley, 2021, The quest to completely map the world's oceans in support of understanding marine biodiversity and the regulatory barriers we have created, in, *M. Nordquist and R. Long, eds., Marine Biodiversity of Areas Beyond National Jurisdiction*, Center for Ocean Law and Policy, V. 24, Chapter 8, pp. 149-156, Brill Publishers, Leiden, The Netherlands, ISBN 978-90-04-42241-4 [978-90-04-42243-8](https://doi.org/10.1007/978-90-04-42243-8)

O'Regan, Matt ,Cronin, Thomas, Reilly, Brendan, Alstrup, Aage Kristian Olsen, Gemery, Laura, Golub, Anna, Mayer, Larry, Morlighem, Mathieu, Moros, Matthias , Munk, Ole Lajord, Nilsson, Johan, Pearce, Christof, Detlef, Henrieka, Stranne, Christian, Vermassen, Flor, West, Gabriel, and Jakobsson, Martin, The Holocene dynamics of Ryder Glacier and ice tongue in north Greenland, *The Cryosphere*, Preprint no.: tc-2021-95, <https://tc.copernicus.org/preprints/tc-2021-95/>

Snoeijs-Leijonmalm, P., Gjosaeter, H., Ingvaldsen, R.B., Knutsen, T., Korneliussen, Ona, E., Skjoldal, H.R., Stranne, C., Mayer, L.A., Jakobsson, M., and Gardfeldt, K., 2021, A deep scattering layer under the North Pole, *Progress in Oceanography*, vol. 94, 102560,ISSN 0079-6611, <https://doi.org/10.1016/j.pocean.2021.102560>

Ware, C., Mayer, L., Johnson, P., Jakobsson, M. and Ferrini, V., 2020, A geographic grid system for visualizing bathymetry, *Geosci. Instrum. Method. Data Syst.*, **9**, 375–384, <https://doi.org/10.5194/gi-9-375-2020>

Kates Varghese, H., Miksis-Olds, J., DiMarzio, N., Lowell, K., Linder, E., Mayer, L., and Moretti, D., 2020, The effect of two 12 kHz multibeam mapping surveys on the foraging behavior of Cuvier's beaked whales off of southern California, *The Journal of the Acoustical Society of America* 147, 3849-3858 (<https://doi.org/10.1121/10.0001385>)

Weidner, E., Stranne, C., Sundberg, J., Weber, T., Mayer, L. and Jakobsson, M., 2020, Tracking the spatiotemporal variability of the oxic-anoxic interface in the Baltic Sea with broadband acoustics, *ICES Journal of Marine Science*, <https://doi.org/10.1093/icesjms/fsaa153>

Mayer, L.A., 2020, Climate change and the legal effects of sea level rise: an introduction to the science, in Heider, T., ed., 2020, *New Knowledge and Changing Circumstances in the Law of the Sea*, Brill, Nijhoff Press, Leiden, Boston, pp. 343-357.

Baumert, K. A. and Mayer, L.A., 2020, Submarine ridges and submarine elevations under the Law of the Sea Convention: a further look, in Heider, T., ed., 2020, *New Knowledge and Changing Circumstances in the Law of the Sea*, Brill, Nijhoff Press, Leiden, Boston, pp. 264-288.

Barker, L.D.L.; Jakuba, M.V.; Bowen, A.D.; German, C.R.; Maksym, T.; Mayer, L.; Boetius, A.; Dutrieux, P.; Whitcomb, L.L. Scientific Challenges and Present Capabilities in Underwater Robotic Vehicle Design and Navigation for Oceanographic Exploration Under-Ice. *Remote Sens.* 2020, 12, 2588. <https://www.mdpi.com/2072-4292/12/16/2588/pdf>

Weidner, E., Stranne, C., Sundberg, J., Weber, T., Mayer, L. and Jakobsson, M., 2020, Tracking the spatiotemporal variability of the oxic-anoxic interface in the Baltic Sea with broadband acoustics, *ICES Journal of Marine Science*, fsaa153, <https://doi.org/10.1093/icesjms/fsaa153>

Mayer, L.A., 2020, Climate change and the legal effects of sea level rise: an introduction to the science, in Heider, T., ed., 2020, *New Knowledge and Changing Circumstances in the Law of the Sea*, Brill, Nijhoff Press, Leiden, Boston, pp. 343-357.

Baumert, K. A. and Mayer, L.A., 2020, Submarine ridges and submarine elevations under the Law of the Sea Convention: a further look, in Heider, T., ed., 2020, *New Knowledge and Changing Circumstances in the Law of the Sea*, Brill, Nijhoff Press, Leiden, Boston, pp. 264-288.

Varghese, H.K., Miksis-Olds, J., DiMarzio, N., Lowell, K., Linder, E., Mayer, L.A., and Moretti, D., 2020, The effect of two 12-kHz multibeam mapping surveys on the foraging behavior of Cuvier's beaked whales off Southern California, *Jour. Acoustical Society of America*, v. 14, no. 6., pp. 3849-3858. <https://doi.org/10.1121/10.0001385>

Mukasa, S. B., Andronikov, A., Brumley, K., Mayer, L. A., & Armstrong, A., 2020, Basalts from the Chukchi Borderland:  $^{40}\text{Ar}/^{39}\text{Ar}$  Ages and Geochemistry of submarine intraplate lavas dredged from the western Arctic Ocean. *Journal of Geophysical Research: Solid Earth*, 125, e2019JB017604. <https://doi.org/10.1029/2019JB017604>

Masetti, G., Smith, M. J., Mayer, L. A., & Kelley, J. G. W., 2020, Applications of the Gulf of Maine Operational Forecast System to Enhance Spatio-Temporal Oceanographic Awareness for Ocean Mapping. *Frontiers in Marine Science*, v. 6, Sci., 14 January 2020 | <https://doi.org/10.3389/fmars.2019.00804>



Boggild, K., Mosher, D.C., Travaglini, P., Gebhardt, C., and Mayer, L.A., 2020, Mass wasting on Alpha Ridge in the Arctic Ocean: new insights from multibeam bathymetry and sub-bottom profiler data, *Geological Society of London Special Publication 500*, <https://doi.org/10.1144/SP500-2019-196>

Sowers, D., Masetti, G., Mayer, L.A., Johnson, P., Gardner, J.V., and Armstrong, A., 2020, Standardized Geomorphic Classification of Seafloor Within the United States Atlantic Canyons and Continental Margin, *Frontiers in Marine Science*, v. 7, pp. 9, <https://doi.org/10.3389/fmars.2020.00009>

Sowers, D., Dijkstra, J. A., Mello, K., Masetti, G., Malik, M., & Mayer, L. A., 2020. Chapter 56 Application of the coastal and marine ecological classification standard to Gosnold Seamount, North Atlantic Ocean. In *Seafloor Geomorphology as Benthic Habitat* (pp. 903-916). doi:[10.1016/b978-0-12-814960-7.00056-7](https://doi.org/10.1016/b978-0-12-814960-7.00056-7)

Hogan, K, Jakobsson, M., Mayer, L. A., Reilly, B., Jennings, A., Mix, A., Nielsen, T., Andresen, K. J., Normark, E., Heirman, K., Kamla, E., Jerram, K., and Stranne, C., 2020, Glacial sedimentation, fluxes and erosion rates associated with ice retreat in Petermann Fjord and Nares Strait, NW Greenland, *The Cryosphere*. Copernicus Publications, v.14, pp. 261-286, <https://doi.org/10.5194/tc-14-261-2020>

Reilly, B. T., Stoner, J. S., Mix, A. C., Walczak, M. H., Jennings, A., Jakobsson, M., Cheseby, M. (2019). Holocene break-up and reestablishment of the Petermann Ice Tongue, Northwest Greenland. *Quaternary Science Reviews*, 218, 322-342. doi:[10.1016/j.quascirev.2019.06.023](https://doi.org/10.1016/j.quascirev.2019.06.023)

Sowers, D., Dijkstra, J. A., Masetti, G., Mayer, L. A., Mello, K., and Malik, M. A., 2019, “Applying a Standardized Classification Scheme (CMECS) to Multibeam Sonar and ROV Video Data on Gosnold Seamount,” in *Seafloor Geomorphology as Benthic Habitat: GeoHab Atlas of Seafloor Geomorphic Features and Benthic Habitat*, 2nd ed., Elsevier Inc. Chapt. 57, p. 1076

Kates Varghese, H., Smith, M., Miksis-Olds, J., and Mayer, L., 2019, Mapping multibeam echosounders: A square peg in a round hole, *Journal of Ocean Technology*, V. 14, no. 3, pp. 41-46. [https://www.thejot.net/article-preview/?show\\_article\\_preview=1085](https://www.thejot.net/article-preview/?show_article_preview=1085)

Wöfl A., Snaith H., Amirebrahimi S., Devey C. W., Dorschel B., Ferrini V., Huvenne Veerle A. I., Jakobsson M., Jencks J., Johnston G., Lamarche G., Mayer L., Millar D., Pedersen T., Picard K., Reitz A., Schmitt T., Visbeck M., Weatherall P., Wigley R., 2019, Seafloor Mapping – The Challenge of a Truly Global Ocean Bathymetry, *Frontiers in Marine Science*, v.6., pp. 283, DOI=10.3389/fmars.2019.00283 <https://www.frontiersin.org/article/10.3389/fmars.2019.00283>

Weidner, L., Weber, T.C., Mayer, L.A., Jakobsson, M., Chernykh, D., Semiletov, I., 2019, A wideband acoustic method for direct assessment of bubble-mediated flux, *Continental Shelf Research*, S0278-4343(18)30364-9 <https://doi.org/10.1016/j.csr.2018.12.005>

Mayer, L. A., 2018, Mapping the world’s oceans, *The Bridge – Journal of the National Academy of Engineering*, v. 48, no. 3, pp. 35-44. <https://www.nae.edu/Publications/Bridge/195218.aspx>

Björk, G., Jakobsson, M., Assmann, K., Andersson, L.G., Nilsson, J., Stranne, C., and Mayer, L., 2018 ,Bathymetry and oceanic flow structure at two deep passages crossing the Lomonosov

Ridge, *Ocean Sci.*, 14, 1–13, <https://doi.org/10.5194/os-14-1-2018>, 2018.  
<https://os.copernicus.org/articles/14/1/2018/>

Lomac-MacNair, K., Jakobsson, M., Mix, A., Freire, F., Hogan, K., Mayer, L.A., and Smultea, M.A., 2018, Seal occurrence and habitat use during summer in Petermann Fjord, Northwestern Greenland, *Arctic*, v.71, no.3, p. 334–349. ISSN 1923-1245 <https://doi.org/10.14430/arctic4735>

Mayer, L.; Jakobsson, M.; Allen, G.; Dorschel, B.; Falconer, R.; Ferrini, V.; Lamarche, G.; Snaith, H.; Weatherall, P., 2018, The Nippon Foundation—GEBCO Seabed 2030 Project: The Quest to See the World’s Oceans Completely Mapped by 2030. *Geosciences*, 8, 63; <https://doi.org/10.3390/geosciences8020063>

Masetti, G.; Mayer, L.A.; Ward, L.G. A Bathymetry- and Reflectivity-Based Approach for Seafloor Segmentation. *Geosciences* 2018, 8, 14. <https://doi.org/10.3390/geosciences8010014>

Jakobsson, M. , Hogan, K., Mayer, L.A., Mix, A., Jennings, A., Stoner, J., Ericson, B., Jerram, K., Mohammad, R., Pearce, C., Reilly, B. and Stranne, C., 2018, The Holocene retreat dynamics and stability of Petermann Glacier in northwest Greenland, *Nature Communications*, v. 9, no. 1, p. 2104. Doi: 10.5194/os-14-1-2018, <https://www.nature.com/articles/s41467-018-04573-2>

Stranne, C., Mayer, L., Jakobsson, M., Weidner, E., Jerram, K., Weber, T. C., Anderson, L. G., Nilsson, J., Björk, G., and Gårdfeldt, K.: Acoustic mapping of mixed layer depth, *Ocean Sci.*, 14, 503-514, <https://doi.org/10.5194/os-14-503-2018>, 2018.

Di Stefano, M.; Mayer, L.A. An Automatic Procedure for the Quantitative Characterization of Submarine Bedforms. *Geosciences* 2018, 8, 28. <https://doi.org/10.3390/geosciences8010028>

Malik, M., Lurton, X., and Mayer, L.A., 2018, A framework to quantify uncertainties of seafloor backscatter from swath mapping echosounders, *Marine Geophysical Research*, <https://doi.org/10.1007/s11001-018-9346-7>

Björk, G., Jakobsson, M., Assmann, K., Andersson, L., Nilsson, J., Stranne, C., and Mayer, L., Bathymetry and oceanic flow structure at two deep passages crossing the Lomonosov Ridge, *Ocean Sci.*, 2018, doi.org/10.5194/os-2017-14. <https://www.ocean-sci.net/14/1/2018/>

Stranne, C., Mayer, L.A., Weber, T.C., Ruddick, B.R., Jakobsson, M.J., Jerram, K., Weidner, E., Nilsson, J. and Gardfeldt, K., 2017, Acoustic mapping of thermohaline staircases in the Arctic Ocean, *Nature Scientific Reports*, 7:15192, DOI:10.1038/s41598-017-15486-3

Morlighem, M., Williams, C. N., Rignot, E., An, L., Arndt, J. E., Bamber, J. L., Catania, G., Chauche, N., Dowdeswell, J. A., Dorschel, B., Fenty, I., Hogan, K., Howat, I., Hubbard, A., Jakobsson, M., Jordan, T.M., Kjeldsen, K.K., Millan, R.,

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Mayer, L.A. and Detrick, R.S., 1984. A seismic intercalibration experiment at DSDP Site 603 in the western North Atlantic, Proceedings CSPG-CSEG National Meeting, June 1984, pp. 262-263.

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Mayer, L.A., 1984, The Chirp Sonar: Towards a quantitative high- resolution seismic profiler, Inaugural lecture of Atlantic Section, Marine Technology Society, December 1984.

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Mayer, L.A., 1985, High-resolution acoustic stratigraphy: Paleoceanographic applications - Invited paper, 75th Annual Meeting of Geologische Vereinigung, Kiel, W. Germany, Terra Cognita, vol. 5, no. 1, p. 74.

Mayer, L.A., 1985, Seismic stratigraphy in the equatorial Pacific: paleoceanography and global events. Atlantic Geoscience Society. Public Lecture March, 1985.

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### **Invited Talks and Published Abstracts: (1986)**

Marine geological/geotechnical acoustic testing, Workshop on Geotechnical In Situ Testing for the Canadian Offshore, Bedford Institute of Oceanography, January 1986.

Sediment attenuation measurements using high-resolution Chirp Sonar - 5th Biennial SEG/ONR Joint Technical Symposium, 26- 27 February 1986.

Sediment and Ocean History Problems, ODP, Conference on Ocean Drilling, Dalhousie University, March 1986.

Quantitative acoustic profiling and remote sediment property determinations using a Chirp Sonar, Special Colloquium in Geophysics, Institute for Geophysics University of Kiel, June 1986.

Tectonics and morphology of the Mid-Atlantic Ridge, Special Lectures in Modern Oceanography, Institute of Geology and Paleontology, University of Kiel, June 1986.

Paleoceanography and acoustic stratigraphy: Special Lectures in Modern Oceanography, Institute of Geology and Paleontology, University of Kiel, June 1986.

Paleoceanographic significance of equatorial Pacific seismic record, Second International Conference on Paleoceanography Woods Hole, MA, September 1986.

Submersible observations of the slope failure and giant bedforms resulting from the 1929 Grand Banks earthquake, (w/ J. Hughes Clarke), SEPM Meeting, September 1986.

Evenements Paleoceanographiques et Reflecteurs sismiques dans le Pacific Equatorial. (w/ E. Vincent) Reunion specialisee de la Societe geologique de France 'Oceans' Villefranche-sur-Mer, December 1986.

### **Invited Talks and Published Abstracts (1987)**

Quantitative seismic profiling and remote sediment property determinations using broad-band sources, British Geological Survey, Edinburgh, Scotland, February 1987.

High-resolution seismic profiling: Applications in paleoceanography and remote sediment classification, Conoco Distinguished Lectures, Woods Hole, MA, May 1987.

Towards quantitative seismic profiling: The extraction of sediment properties from broad-band seismic signals, Conoco Distinguished Lectures, Woods Hole, MA, May 1987.

Mayer, L.A., Courtney, R.C. and Moran, K. Ultrasonic measurements of marine sediment properties, Proceedings: Oceans 87, vol. 1, p. 139.

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### **Invited Talks and Published Abstracts (1988)**

Mayer, L.A., The ODP Sediments and Ocean History Program: A Framework for future drilling. Geol. Assoc. of Canada National Meeting, St. Johns, Newfoundland, Canada, May 1988.

Mienert, J., Mayer, L.A., and Jones, G.A., Paleoenvironmental implications of rockmagnetic and geoacoustic properties of late Quaternary deep-sea sediments from the central eastern Arctic, presented at Geologic History of the Polar Oceans: Arctic versus Antarctic, NATO Advanced Research Workshop, Bremen, Germany, October 1988.

Boyd, R., and Mayer, L.A., Sedimentary Processes and the Ocean Drilling Program, Invited Talk, American Geophysical Union Meeting, San Francisco, CA, December 1988.

Acoustic Stratigraphy—a special lecture series given at the Université of Paris VI, February 1989.

High resolution acoustic stratigraphy: Applications in paleoceanography, ETH, Zurich, Switzerland, May 1989.

Quantitative acoustic profiling and remote sediment property determination, IPG, Paris France, June 1989.

Moran, K., Christian, H., Mayer, L.A., and Fader, G.B.J., 1989, The physical properties and Quaternary sediments of the Grand Banks of Newfoundland, 25th Conference on Quaternary Engineering Geology, Edinburgh, Scotland, September 1989.

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High-resolution acoustic profiling: progress towards the direct extraction of sediment properties and paleoceanographic data, Canadian Acoustical Association Annual Meeting, Halifax, ON, Canada, October 1989.

Predictive carbonate stratigraphy: A new tool for extremely high-resolution paleoceanographic studies and the potential for the remote extraction of paleoclimatic data, EOS, vol., American Geophysical Union National Meeting, San Francisco, CA, December 1989.

Mayer, L.A., Shor, A.N., Hughes Clarke, J., and Piper, D.J.W, Dense biological communities at 3850 m on the Laurentian Fan and their relationship to the deposits of the 1929 Grand Banks earthquake, Geol. Assoc. of Canada National Meeting, Vancouver, May 1990.

Mayer, L.A., Acoustic Stratigraphy: Applications to Deep Sea Paleoceanography—a series of lectures given in Bergen Norway to representatives of the Nordic scientific community, November 1990.

Mayer, L.A., and Thompson, K., 1990, Predictive carbonate stratigraphy and the generation of long, extremely high-resolution paleoceanographic time-series. EOS, vol. 71, no. 43, p. 1378.

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### **Invited Talks and Published Abstracts (1991)**

Vincent, E., Herbert, T.D., and Mayer, L.A., 1991, Extending Pleistocene-like stratigraphic resolution into the Neogene, European Union of Geology VI, Trieste, Italy.

Jansen, E., Mayer, L.A., Backman, J, Leckie, M, and Takayama, T., 1991, High-resolution paleoclimate record for the period 5 - 2 Ma from the Ontong Java Plateau: Long-term and short-term climatic changes, EOS vol. 72, no. 44, pp. 258- 259.

Wilkens, R., Bassinot F., Lyle, M., Mayer, L.A., and Mosher, D., 1991, New corrections to laboratory velocities of pelagic carbonates: where the seismic stratigraphers went wrong, EOS, vol. 72, no. 44, pp. 250.

Mayer, L.A., Porta, D., Schock, S., and LeBlanc, L., 1991, A digital FM (Chirp) profiling technique for high resolution surveys of surficial subbottom sediments, EOS, vol. 72, no. 51, p. 29.

Hughes Clarke, J.E., Costello, G., Mayer, L.A., and Wells, D.E., 1991, Ocean Mapping: A Canadian Perspective, 1991 Exclusive Economic Zone Symposium, Seattle, WA.

Stanton, T.K., Chu, D., Mayer, L.A., and Courtney, R., 1991, Estimating unresolved roughness from echo amplitude fluctuations, Journal of the Acoustical Society of America, vol. 90, no. 4, pt. 2, p. 2231.

Mayer, L.A., 1991, Ocean Mapping at the University of New Brunswick, SeaBEAM Users Group Annual Meeting, San Francisco, CA, December 1991.

### **Invited Talks and Published Abstracts (1992)**

Mayer, L.A., Ocean Drilling Program Leg 138: Preliminary Results, Canadian National Committee on ODP, Ottawa, ON, Canada, January 1992.

Mayer, L.A., Ocean Mapping Activities in Canada, Office of Naval Research, Naval Research Lab Workshop on Mine Countermeasures, Austin, TX, February 1992.

Mayer, L.A., and Hughes Clarke, J.H., Ocean Mapping at the University of New Brunswick and the Hydrographic Ground Truthing Experiment, Atlantic Geoscience Centre Science Hour, February 1992.

Mayer, L.A., The Ocean Drilling Program and Unravelling the History of Climate, Lansdowne Lecture, University of Victoria, March 1992.

Mayer, L.A., High-Resolution Acoustic Stratigraphy: Applications in Paleoceanography and the Remote Classification of Seafloor Materials, Lansdowne Lecture, University of Victoria, March 1992.

Mayer, L.A., Ocean Mapping at UNB and the Hydrographic Ground Truthing Experiment, Canadian Hydrographic Association, Victoria, BC, Canada, March 1992.

Mayer, L.A., New Views of the Ocean: Developments in the Art of Ocean Mapping, Lansdowne Lecture, University of Victoria, March 1992.

Mayer, L.A., Ocean Mapping at UNB and the Hydrographic Ground Truthing Experiment, Defence Research Establishment Pacific, Victoria, BC, Canada, March 1992.

Mayer, L.A., Future Trends in the Earth Sciences: The Oceans—Big Programs, Big Costs, Big Thinking?, Geologic Association of Canada Annual Meeting, Special Session in Honour of the 125th Anniversary of the Geological Survey of Canada, Wolfville, NS, Canada, May 1992.

Bloomer, S.F., Mayer, L.A., and Leg 138 Shipboard Scientific Party, Preliminary results of a study of the seismic stratigraphy of the Eastern Equatorial Pacific, Proceedings of the Fourth International Conference on Paleoceanography, Kiel, Germany, pp. 67-68, September 1992.

Hagelberg, T., Shackleton, N., Mayer, L., Pisias, N., Mix, A., and ODP Leg 138 Shipboard Party, Spatial and temporal variability of late Neogene equatorial Pacific carbonate: ODP Leg 138, Proceedings of the Fourth International Conference on Paleoceanography, Kiel, Germany, pp. 134-135, September 1992.

Mayer, L.A., Shackleton, N.J., Hagelberg, T., Pisias, N., Ware, C., Marinelli, K., and the ODP Leg 138 Scientific Party, 3-D visualization of evolutionary spectra of Leg 138 carbonate records, Proceedings of the Fourth International Conference on Paleoceanography, Kiel, Germany, pp. 192-193, September 1992.

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Shackleton, N.J., Hall, M.A., Mayer, L., Pisias, N., and ODP Leg 138 Shipboard Party, Oxygen isotope stratigraphy of the Pliocene in ODP Site 846, Proceedings of the Fourth International Conference on Paleoceanography, Kiel, Germany, pp. 260-261, September 1992.

Mayer, L.A., Nov 6, 1992, New tools and approaches to the visualization and interpretation of ocean mapping and paleoclimatic data, The Lamont Colloquium, Lamont Doherty Geological Observatory, New York.

Pisias, N.P., Mayer, L.A. and the Leg 138 Scientific Party, 1992, High-resolution late Neogene records from the Equatorial Pacific—Legacy of ODP Leg 138, EOS, vol. 73, no. 43, pp. 249.

Hagelberg, T., Pisias, N., Shackleton, N.J., and Mayer, L.A., 1992, Spatial and temporal variability of late Neogene sediment composition in the eastern equatorial Pacific: ODP Leg 138, EOS, vol. 73, no. 43, pp. 250.

Mayer, L.A., Pisias, N.G., Berger, W.H., Rea, D.R., Janecek, T., and the staffs of ODP Legs 130, 138 and 145, 1992, High resolution paleoceanographic drilling in the Pacific: towards a synthesis, EOS, vol. 73, no. 43, pp. 250.

Mayer, L.A., 1992, New tools and visualization techniques of the UNB Ocean Mapping Group, SeaBEAM Users Group Meeting, San Francisco, CA, December 1992.

### **Invited Talks and Published Abstracts (1993)**

New Tools and Approaches for Exploring Ocean Mapping Data, DuPont/CONOCO Hot Topics in Earth Sciences Lecture, Woods Hole Oceanographic Institution, 22 January, 1993.

Integration and interpretation of satellite, airborne, and ocean-mapping data, Annual General Meeting of the Eastern Section of the Marine Technology Society, Halifax, Nova Scotia, Canada, 25 February 1993.

A multifaceted hydrographic ground-truthing experiment in the Bay of Fundy, Keynote Talk, Acoustic Classification and Mapping of the Seabed, Institute of Acoustics, Bath England, 15 April, 1993.



Carbonate Sedimentation in the Pacific, Third Technical Meeting on Natural Sources and Sinks of Greenhouse Gases, AES, Toronto, ON, Canada, 21 April, 1993.

New Tools and Approaches for Exploring Ocean Mapping Data, Inst. of Geophysics and Planetary Physics, Scripps Institution of Oceanography, La Jolla, CA, 5 May, 1993.

HYGRO-92, An Acoustic Ground Truthing Experiment in the Bay of Fundy, Canadian Inst. of Mapping and Surveying Annual Meeting, Toronto, ON, Canada, 10 June 1993.

New Tools and Approaches for Exploring Ocean Mapping Data, University of Bergen, Norway, 18 June 1993.

High-resolution, Multi-parameter mapping of the Bay of Fundy, Submerged Lands Management Conference, St. Andrews, NB, Canada, September 1993.

Bloomer, S.F. and Mayer, L.A., 1993, Can the lateral extent of high productivity events be mapped from seismic records, EOS, vol. 74, no. 43, p. 368.

Mayer, L.A., Ware, C., Miller, S., Macdonald, K.,C., Schierer, D., Wright, D., and Forsyth, D., 1993, Interactive flight through SeaBEAM 2000 data from the East Pacific Rise between 15 and 19 degrees south, EOS, vol. 74, no. 43, p. 594.

#### **Invited Talks and Published Abstracts (1994)**

New Tools and Approaches and Approaches to Seafloor Mapping and Remote Sediment Classification, Keynote address at British Petroleum Surveyors Technical Exchange, Aberdeen, Scotland, 28 January 1994.

Ocean Mapping Activities at The University of New Brunswick, Address to Naval Oceanographic Office and Naval Research Lab, Stennis Space Center, Bay St. Louis, MS, 28 February 1994.

Strategic Alliances in Ocean Mapping, CeBIT '94 Hannover Germany, 24 March 1994.

New Tools and Approaches and Approaches to Seafloor Mapping and Seafloor Visualization, University of Rhode Island, Marine Geology Seminar, Narragansett RI, 1 April 1994.

Ocean Mapping Trends and Article 76, Law of the Sea Article 76 Workshop, Fredericton NB, Canada, 14 April 1994.

L.A. Mayer, C.F.M. Lewis, A. Godin, and A.G. Sherin, Swath bathymetric mapping in two Lake Ontario areas: Evidence for lakebed drumlins and ship traffic debris, Geol. Assoc. of Canada Annual Meeting, May 1994.

L.A. Mayer, T. Janecek, N. Piasias, N. Shackleton, J. Farrell, and T. Hagelberg, ODP Leg 138: a high-resolution look at the paleoceanography of the eastern equatorial Pacific, Geol. Assoc. of Canada Annual Meeting, May 1994.

U.S./Canadian Hydrographic Commission (NOAA/CHS) Multibeam Training Course, St. Andrews, NB, Canada, 13- 27 August 1994.

Bloomer, S.F., and Mayer, L.A., 1994, Connecting the seismic stratigraphy of the eastern equatorial Pacific to the carbonate stratigraphy of the central equatorial Pacific and the southern ocean, EOS, Transactions, of American. Geophysical. Union, vol. 75, no. 44, p. 309.

### **Invited Talks and Published Abstracts (1995)**

New Approaches to Seafloor Mapping and the Remote Identification of Seafloor Properties, Hawaii Inst. of Geophysics, 1 February 1995.

Three Dimensional Visualization of Orbital Forcing and Climatic Response: Interactively Exploring the Pacemaker of the Ice-Ages, Geologische Vereinigung, Bremen, Germany, 23 February 1995.

Royal Danish Hydrographic Organization, Multibeam Training Course, Hundested, Denmark, 13 - 17 March 1995.

Storage and Display of Bathymetric and Coastline Information for Tactical Sonar Applications, Defence Research Establishment Atlantic, 4 April 1995.

Three Dimensional Visualization of Orbital Forcing and Climatic Response: Interactively Exploring the Pacemaker of the Ice-Ages, Dalhousie University Oceanography Seminar Series, 4 April 1994.

Real-time Processing and Interactive 3-D Visualization of Multibeam Sonar Data, European Union of Geosciences, Strasbourg, France, 11 April 1995.

U.S./Canadian Hydrographic Commission (NOAA/CHS) Multibeam Sonar Training Course, St. Andrews. NB, Canada, 18-29 June 1994.

Climate System History and Dynamics, Royal Society of Canada Global Change Meeting, 28 September 1995.

Bloomer S.F., and Mayer, L.A., 1995, Prediction of acoustic impedances from seismic records using autoregressive deconvolution, Proc. of the Fifth Intl. Conf. on Paleoceanography, Halifax, NS, Canada, p. 32.

Bloomer, S.F., Rack, F.R., and Mayer, L.A., 1995, Evaluating the global significance of seismic events in the eastern equatorial Pacific by correlating GRAPE stratigraphies, Proc. of the Fifth Intl. Conf. on Paleoceanography, Halifax, NS, Canada, p.184.

Mayer L.A., and Gobrecht, C.A., 1995, Three dimensional visualization of orbital forcing and climatic response, Proc. of the Fifth Intl. Conf. on Paleoceanography, Halifax, NS, Canada p. 52.

Canada and the Ocean Drilling Program, Korea Inst. of Geology, Mining and Materials, Taejon, Korea, 15 November 1995.

Ocean Mapping and Seafloor Classification, Korea Inst. of Geology, Mining and Materials, Taejon, Korea, 16 November 1995.

Ocean Mapping Group Activities: Applications to Fisheries Geomatics, Inst. Maurice LaMontagne, Mont Joli, PQ, Canada, 30 November 1995.

Building a high-resolution database: the experience from ODP Leg 138, Ocean Drilling Stratigraphic Network Workshop, Bremen, Germany, 20 December 1995.

### **Invited Talks and Published Abstracts (1996)**

Fisheries Geomatics at UNB, Canadian Hydroacoustics Program Workshop, Ottawa, ON, Canada. 4 March 1996.

Western Australia Hydrographic Association/Naurtonix, Multibeam Sonar Training Course, Perth, Australia, 11-15 March 1996.

Ocean Mapping at UNB, Western Pacific Hydrographic Association Meeting, Perth, Australia, 14 March 1996.

US Army Corps of Engineers Multibeam Sonar Training Course, Mobile, AL, 18-20 March 1996.

IMAGES—The Marine Component of CSHD, Canadian Geophysical Union Meeting, Banff, AB, Canada, May 1996.

U.S./Canadian Hydrographic Commission (NOAA/CHS) Multibeam Sonar Training Course, St. Andrews, NB, Canada, 15-26 June 1996.

Multibeam Sonar: Potential Applications for Fisheries Research, NOAA Environmental Data for Fisheries Research Workshop, Pacific Grove, CA, July 1996.

Interactive 3-D Visualization of Passamaquoddy Bay, RARGOM Conference, St. Andrews, NB, Canada, September 1996.

Extraction and visualization of high-resolution paleoclimatic records in the equatorial Pacific, Les Lundis du GEOTOP, Invited Seminar, October 1996.

Unravelling the History of Oceanic Variability, Invited Talk, The Earth System: Geology Lessons for our Future, An International Symposium of the Earth System Evolution Program of the Canadian Institute for Advanced Research, Toronto, ON, Canada, 5-7 December, 1996.

C.L. Schuur, J.A. Goff, J.A. Austin, Jr., C. Fulthorpe, L.A. Mayer, J.E. Hughes Clarke, 1996, Quaternary geomorphology of the New Jersey continental shelf from acoustic swath mapping and high-resolution seismic reflection data, EOS, vol.77, no. 46., p. 329. December 1996.

L.A. Mayer, J.E. Hughes Clarke, J. A. Goff, C. L. Schuur, D.J.P. Swift, 1996, Multibeam Sonar Bathymetry and Imagery from the New Jersey Continental Margin: Preliminary Results, EOS, vol.77, no. 46, p. 329. Invited. December 1996.

J.A. Goff, C.L. Schuur, L.A. Mayer, J.E. Hughes Clarke, High-resolution bathymetric survey of the New Jersey continental margin: Quantitative analysis of sand ridge morphology, EOS, vol.77, no. 46, p. 329. December 1996.

J.E. Hughes Clarke, L.A. Mayer, J.A. Goff, H. Lee, W. Wakefield, 1996, Regional seabed characterization through analysis of the angular response of seabed backscatter strength: application to STRATAFORM East and West Coast surveys. EOS, vol.77, no. 46, p. 329, December 1996.

S.E. Bloomer and L.A. Mayer, 1996, Limitations of Carbonate Prediction Techniques from Wet-Bulk Density, EOS, vol. 77, no. 46, p. 291. December 1996.

### **Invited Talks and Published Abstracts (1997)**

Multibeam Mapping and Fisheries Geomatics, Invited Talk at World Bank, NY, 15 January 1997.

Multibeam Sonar Training Course, RACAL Ltd. Grt Yarmouth, UK, 3-7 February 1997.

Recent advances in seafloor mapping and remote seafloor classification, Invited Talk, Alaska Fisheries Science Center, Seattle, WA, 3 April 1997.

Recent advanced in Seafloor Mapping and Visualization, Keynote Talk, Spatial Data and Remote Sensing in Invertebrate Fisheries Workshop, Fort Walton Beach, FL, 19 April 1997.

Mayer, L.A., Gobrecht, C., Hou, T., and Rack, F., 1997, Interactive 3-D visualization of Milankovitch forcing and the spectral response of long-paleoclimate time-series. Keynote Talk, Annual Meeting of the Canadian Geophysical Union, Abstracts of the CGU Annual Meeting, Banff, AB, Canada, p. 57.

Mayer, L.A., Multibeam Mapping of Continental Margins and the STRATAFORM Program Keynote Address, 3rd EU Conference on Exchange Processes at the Continent/Ocean Margins in the North Atlantic, Vigo, Spain, 15 May 1997.

Multibeam Mapping and the STRATAFORM Program, Invited Talk, IFREMER, Brest, France, 13 June 1997.

US/Canadian Hydrographic Commission (NOAA/CHS) Multibeam Sonar Training Course, St. Andrews, NB, Canada, 16-27 June 1997.

Mayer, L.A., Dijkstra, S., Hughes Clarke, J.E., Paton, M., and Ware, C., 1997, Interactive tools for the exploration and analysis of multibeam and other seafloor acoustic data, Keynote Talk at NATO SACTLANT Workshop on High Frequency Acoustics in Shallow Water, La Spezia, Italy, July 1997.

Mayer, L.A., Carbonate Sedimentation in the Equatorial Pacific: A non-chemist's perspective, Keynote Talk, Albatross Symposium, Royal Swedish Academy of Sciences, Stockholm, Sweden, 18 August 1997

Mayer, L.A., Rack, F.R., Hillaire-Marcel, C., de Vernal, A., and Bilodeau, G., High-resolution paleoclimate time series derived from multi-sensor track data, Proceedings, AGU, EOS.

### **Invited Talks and Published Abstracts (1998)**

Mayer, L.A., Visualization as a tool in fisheries assessment, Invited Talk, Methods of Fisheries Resource Assessment, sponsored by The Research Council of Norway and the Norwegian Ministry of Fisheries, Ustaoset, Norway, 2-4 February 1998.

US Naval Oceanographic Office, Multibeam Sonar Training Course, Gulfport, MS, 15-20 February 1998.

US/Canadian Hydrographic Commission Multibeam Training Course, Victoria, BC, Canada, 2-9 March 1998.

Mayer, L.A., New Approaches to Ocean Mapping and Seafloor Visualization, University of New Hampshire, 13 March 1998.

Geological Survey of Canada, Multibeam Training Course, Halifax, NS, Canada, 20-24 April 1998.

Mayer, L.A., Ocean Mapping Activities in Canada, Canada Day Seminars, Louis St. Laurent at EXPO'98, Lisbon, Portugal, 1 July 1998.

Mayer, L.A., Unraveling Climatic Variability through Ocean Drilling, University of Western Ontario, 1 October 1998,

Mayer, L.A., Three-D Visualization of multibeam sonar data, Eighth Biennial Benthic Workshop, Huntsman Marine Science Centre, St. Andrews, NB, Canada, 7 October 1998.

Mayer, L.A., Paton, M., Gardner, J.V., and Ware, C., 1998, Interactive 3-D Visualization of Multibeam Sonar and Other Data: Seeing is Understanding, EOS, Transaction of the American Geophysical Union, vol. 79, no. 45, p. F818.

Mayer, L.A., Gardner, J., Hughes Clarke, J.E., 1998, The continental shelf and slope off San Diego, California: A high-resolution multibeam survey, EOS, Transaction of the American Geophysical Union, vol. 79, no. 45, pp. F824- 825.

Orange, D.L., Field, M., Driscoll, N., Mayer, L.A., 1998, High-resolution seismic images of stacked transgressive sequences proximal to an active fault on the Northern California Margin, EOS, Transaction of the American Geophysical Union, vol. 79, no. 45, p. F497.

Field, M., Gardner, J.V., Mayer, L.A., Hughes Clarke, J.E., and Beaumont, B., 1998, High-resolution multibeam survey of the insular shelf and slope of windward and southern Oahu, Hawaii, EOS, Transaction of the American Geophysical Union, vol. 79, no. 45, p. F826.

Gardner, J.V., Mayer, L.A., and Hughes Clarke, J., 1998, North Maui, Pailolo, Auau, and Kealaikahiku Channels (Maui, Molokai, Lanai, and Kohoolawe, Hawaii): A high-resolution multibeam survey, EOS, Transaction of the American Geophysical Union, vol. 79, no. 45, p. F827.

Hou, T., and Mayer, L.A., 1998, Application of a wavelet multiresolution approach to the processing and analysis of multibeam sonar backscatter data from the California Margin, EOS, Transactions of the American Geophysical Union, vol. 79, no. 45, p. F497.

Dartnell, P., Gardner, J.V., Mayer, L.A., and Hughes Clarke, J.E., 1998, The Continental Shelf off Los Angeles, Long Beach and Newport, Calif.: A high-resolution multibeam survey, EOS, Transaction of the American Geophysical Union, vol. 79, no. 45, p. F827.

Torresan, M., Gardner, J.V., Hughes Clarke, J.E., and Mayer, L.A., 1998, The Southeast insular margin of Kauai, Hawaii: A high-resolution multibeam survey., EOS, Transaction of the American Geophysical Union, vol. 79, no. 45, p. F827.

### **Invited Talks and Abstracts Published (1999)**

Mayer, L.A., New Advances in Ocean Mapping and Seafloor Classification, Invited Lecture, State University of New York at Stony Brook, NY, 16 April 1999.

Mayer, L.A., Weber, M. and Rack, F., Prediction of oxygen isotope stratigraphy from IMAGES core MST records, Abstracts, Canadian Geophysical Union Annual Meeting, Banff, AB, Canada, May 1999.

Mayer, L.A., Viewing the seafloor and ocean history in new ways, Invited Lecture, University of Stockholm, 27 September 1999.

J.E. Hughes Clarke, L.A. Mayer, J. Shaw, R. Parrott, M. Lamplugh, J. Bradford, Data handling methods and target detection results for multibeam and sidescan data collected as part of the search for SwissAir Flight 111, High-Resolution Shallow Water Acoustics, Sydney, Australia, October 1999.

Mayer, L.A., Hughes Clarke, J.E., Ware, C., Gee, L., Paton, M., Gardner, K., Art, and Elson, S., 1999, Interactive 3-D visualization and analysis of multi-sensor, multi-resolution data sets, High-Resolution Shallow Water Acoustics, Sydney, Australia, October 1999.

Mayer, L.A., The New Approaches to Ocean Mapping in Support of Safe Navigation, Invited Talk, National Marine Transportation Safety Workshop, National Academy of Sciences, Washington, DC, November 1999.

Mayer, L.A., Li, Y. and Melvin, G., Applications of Multibeam Sonar and 3-D visualization for fisheries management, Invited Talk, Inst. of Marine Research, Bergen, Norway, November 1999.

Mayer, L.A., and Jakobsson, M., 1999, 3D Visualization of Multiscale Arctic Ocean Bathymetry, EOS, Transaction of the American Geophysical Union, vol. 80, no. 46, p. F996.

Weber, M.E., Mayer, L.A., Hillaire-Marcel, C., Bilodeau, G., 1999,  $\delta^{18}\text{O}$  Prediction from Corelog Data - High-resolution Paleoclimate Proxy Generation, EOS, Transactions of the American Geophysical Union, vol. 80, no. 46, p. F15.

Backman, J., Coakley, B., Edwards, M., Forsberg, Jackson, R., Jakobsson, M., Jokat, W., Kristoffersen, Y., Mayer, L.A., Musatov, E., 1999, Seafloor Sampling on the Lomonsov Ridge: the First Objective for Arctic Scientific Drilling, EOS, Transactions of the American Geophysical Union, vol. 80, no. 46 p. F999.

### **Invited Talks and Published Abstracts (2000)**

Mayer, L.A., Ocean Mapping at UNH, Chapman Colloquium, Department of Earth Science, University of New Hampshire, January 2000.

Mayer, L.A., New Advances in Ocean Mapping, Invited Talk, American Association of Mechanical Engineers, N.E. Chapter, January 2000.

Mayer, L.A., Ocean Mapping at the University of New Hampshire, Coastal Environmental Technology Briefing, U.S. Congress, April 2000.

Mayer, L.A., Applications of 3-D Visualization for a Census of Marine Life, Sloan Foundation Census of Marine Life Workshop, NAS, Woods Hole, MA, May 2000.

Mayer, L.A., Ocean Mapping: A Canadian Success Story, Invited presentation, Committee on Research Grants, NSERC, May 2000.

Weber, M.E., Mayer, L.A., Hillaire-Marcel, C., DeVernal, A., Bilodeau, G., Piper, D., Aksu, A., and Hiscott, R., 2000, Proceedings of the Canadian Geophysical Union.

Weber, M.E., and Mayer, L.A., 2000, Sub-Milankovitch Spectral Evolution of Key Climate Proxies in the Labrador Sea During the last Glacial., Proceedings of GEOCANADA 2000, Calgary, AB, Canada.

Mayer, L.A., 2000, The Ocean Drilling Program and Paleoceanography: Unraveling the History of Oceanic Variability, Proceedings of GeoCANADA 2000, Calgary, AB, Canada.

Mayer, L.A., 2000, New Advances in Ocean Mapping: The Convergence of Technologies in Support of Science and Engineering, Keynote Lecture, GeoCANADA 2000, Calgary, AB, Canada.

Mayer, L.A. 2000, Multibeam Sonar: Applications for marine census work, Sloan Foundation Pilot Census of Marine Life Meeting, Woods Hole Oceanographic Institution, September 2000.

Mayer, L.A., The Future of Ocean Mapping, USGS/GSC Joint meeting on Ocean Mapping, Woods Hole, MA, Invited Lecture, 17 October 2000.

Mayer, L.A., The UNH Center for Coastal and Ocean Mapping, Invited Lecture at the University of Southern Mississippi, Workshop on Hydrographic Sciences, 30 October 2000.

Mayer, L.A., Multibeam Sonars for seafloor and midwater mapping, National Marine Fisheries Service, Woods Hole, MA, Invited Lecture, 27 November 2000.

Mayer, L.A., New Advances in Seafloor Mapping, DARPA Deep Ocean Access workshop, Woods Hole, MA, Invited Lecture, 12 December 2000.

Calder, B.R., Rzhannov, Y., Fonseca, L., Mayer, L.A., Flood, R.D., Statistical Processing of Multibeam Sonar Data from SAX-99, EOS, Transactions of the American Geophysical Union, vol. 82, December 2000, OS62A-32.

Mayer, L.A., LeBlanc, L.R., Schock, S.G., Joe Kravitz and the Chirp Sonar: The Vision of a Prophet, the Patience of a Saint, EOS, Transactions of the American Geophysical Union, vol. 82, December 2000, OS52F-07.

Flood, R.D., Ferrini, V.L., Mayer, L.A., Multibeam Bathymetry and Backscatter at 300 kHz in the SAX99 Study Area, West Florida Shelf, EOS Transactions of the American Geophysical Union, vol. 82, December 2000, OS62A-17.

Fonseca, L., and Mayer, L.A., Modeling High-Frequency Seafloor Backscattering of Gassy Sediments: The Eel River Margin Case, EOS, Transactions of the American Geophysical Union, vol. 82, December 2000, OS62A-18.

Weber, M.E., Mayer, L.A.: Hillaire-Marcel, C., Physical Properties and Their Relation to High-Frequency Climate Change as Recorded by IMAGES Cores From the Labrador Sea, EOS, Transactions of the American Geophysical Union, vol. 82, December 2000, OS52C-14.

Schock, S.G., LeBlanc, L.R., and Mayer, L.A., The Development of Chirp Sonar Technology and its Applications, EOS, Transactions of the American Geophysical Union, vol. 82, December 2000, OS62A-23.

Gardner, J.V., Mayer, L.A., Buktenica, M.W., Bacon, C.R., Dartnell, P., Hellequin, L., Ramsey, D., Robinson, J.E., High-Resolution Multibeam Mapping of Crater Lake, Oregon, EOS, Transactions of the American Geophysical Union, vol. 82, December 2000, V11B-02.

### **Invited Talks and Published Abstracts (2001)**

Mayer, L.A., Visions of the Seafloor, Invited Lecture, Seacoast Science Center, Hampton, NH, 18 January 2001.

Mayer, L.A., Interactive 3-D Visualization and Exploration of Deepwater Geohazards, Keynote Address, Deep-Sea Geohazards, Offshore Technology Conference, Houston TX, 30 April 2001.

Mayer, L.A., The Strataform GIS, Invited Presentation, Marine Geology and Geophysics Database Management Workshop, La Jolla, CA, 15 May 2001.

Mayer, L.A., Future Directions in Seafloor Mapping and Visualization, University of Massachusetts Seminar Series, 17 May 2001.

Mayer, L.A., Melvin, G., Li, Y., and Cochrane, N., Multibeam Sonars: Applications in Fisheries Research, Invited Tutorial, Acoustical Society of America Annual Meeting, Chicago, IL, 4 June 2001.

Mayer, L.A. and Calder, B.R., Mapping and Visualizing Uncertainty in Multibeam Sonar Data, ONR Uncertainty DRI Meeting, Seattle, WA, 27 June 2001.

Mayer, L.A., New Frontiers in Sea Floor Mapping and Data Visualization, Invited Address to National Academy of Sciences Ocean Studies Board, Woods Hole, MA, 10 July 2001.

Jakobsson, M., Calder, B.R., Mayer L.A., and Armstrong, A.A., On the Estimation of Errors in Sparse Bathymetric Geophysical Datasets, EOS Transactions AGU, 82(20), Spring Meeting Supplement, Abstract OS21A-08.

Jakobsson, M., Calder, B.R., Mayer, L.A., and Armstrong, A.A., The uncertainty of a bathymetric contour: implications for the cut-off line, ABLOS Conference, Monaco.

Mayer, L.A., Multibeam mapping and seafloor visualization, Invited Lecture, Gulf of Maine Marine Habitat Mapping Workshop, 22 October 2001.

Mayer, L.A., New advances in seafloor mapping and data visualization, Invited Lecture, GEOFORUM, Houston, TX, 30 October 2001.



Mayer, L.A., Fonseca, L., Paton, M., Jakobsson, M., McLeod, P., The STRATAFORM GIS: Interactive Exploration in 2 and 3 Dimensions, EOS Transactions, AGU, 82 (47), Fall Meeting Supplement, Abstract OS11B-0351.

Ramsey, D.W., Robinson, J.E., Dartnell, P., Bacon, C.R., Gardner, J.V., Mayer, L.A., Buktenica, M.W., Crater Lake Revealed: Using GIS to Visualize and Analyze Postcaldera Volcanoes Beneath Crater Lake, Oregon, EOS Transactions, AGU, 82 (47), Fall Meeting Supplement, Abstract V42C-1041.

Riedel, M., Kelly, D.S., Delaney, J.R., Spence, G.D., Hyndman, R.D., Mayer, L.A., Calder, B.R., Lilley, M.D., Olson, E.O., Schrenk, M.O., Coffin, R., Discovery of an Active Submarine Mud Volcano Along the Nootka Fault West of Vancouver Island, EOS Transactions, AGU, 82 (47), Fall Meeting Supplement, Abstract OS12B-0428.

Austin, J., Goff, J., Gulick, S., Fulthorpe, C., Nordfjord, S., Wiederspahn, M., Saustrup, S., Schock, S., Wulf, J., Gjerding, K., Mayer, L.A., Sommerfield, C., Assessing the "GEO" in GEOCLUTTER: New Chirp Sonar, Sampling, and Compressional Wave Velocity Results From the New Jersey Shelf, EOS Transactions, AGU, 82 (47), Fall Meeting Supplement, Abstract OS42A-0456.

Dingler, J.A., Kent, G.M., Babcock, J.A., Driscoll, N.W., Harding, A.J., Seitz, G.G., Gardner, J.V., Goldman, C.R., Mayer, L.A., Morgan, C.W., Richards, B.C., Differential Strain Accumulation Across Lake Tahoe as Measured From Submerged Paleo-Shorelines, EOS Transactions, AGU, 82 (47), Fall Meeting Supplement, Abstract S52C-0645.

Mayer, L.A., The status of scientific planning in the Integrated Ocean Drilling Program, ODP/IODP Town Meeting, San Francisco, CA, 11 December 2001.

### **Invited Talks and Published Abstracts (2002)**

The Mine Burial Prediction Web Site: Mine Burial Prediction Workshop, Scripps Institution of Oceanography, La Jolla, CA, 15 January 2002.

New Directions in Seafloor Mapping and Data Visualization, Invited Talk, American Academy for the Advancement of Science, Boston, MA, 18 February 2002.

New Directions in Seafloor Mapping and Visualization, Invited Talk, Reson User Group Seminar, London, England, 5 March 2002.

Seafloor Mapping and Ocean Exploration, Invited Talk, National Academies of Science, International Global Ocean Exploration Workshop, Paris, France, 14 May 2002.

Mapping the U.S. EEZ, Presentation to the U.S. Commission on Ocean Policy, 22 July 2002.

UNH Study of Status of Data in Support of U.S. Law of the Sea Claim, Law of the Sea Working Group, NOAA HQ, Bethesda MD, 9 September 2002.

Feasibility and technical limitations in sonar detection of time-dependent seafloor topography, Seafloor Geodesy Workshop, Deep Ocean Exploration Institute, Woods Hole, MA, 11 October 2002.

Gee, L., Reed, B., and Mayer, L.A., Interactive 3D Visualization: An Important Element in Dealing with Increasing Data Volumes and Decreasing Resources, EOS Transactions, AGU, 83 (47), Fall Meeting Supplement, Abstract U52-04, 2002.

Goff, J.A., Mayer, L.A., Schwab, B., Traykovski, P., Wilkins, R., Jenkins, C., Kraft, B., Evans, R., Buynevich, I., Site Survey of the Martha's Vineyard Coastal Observatory: Backscatter, Grain Size and Temporal Evolution of Rippled Scour Depressions, EOS Transactions, AGU, 83 (47), Fall Meeting Supplement, Abstract OS61A-0181, 2002.

Kraft, B.J., Mayer, L.A., Simpkin, P., Goff J.A., Schwab, B., Jenkins C., In Situ Measurement of Sediment Properties and Relationship to Backscatter: An Example From the ONR Mine Burial Program, Martha's Vineyard Coastal Observatory, EOS Transactions, AGU, 83 (47), Fall Meeting Supplement, Abstract OS61A-0182, 2002

Mayer, L.A. Raymond, R., Glang, G., Huff, L., Resolving the Ripples (and a Mine): High-Resolution Multibeam Survey of Martha's Vineyard ONR Mine Burial Program Field Area, EOS Transactions, AGU, 83 (47), Fall Meeting Supplement, Abstract OS61A-0183, 2002.

Hou, T., Mayer, L.A., Kraft, B., Seafloor Characterization from Spatial Variation of Multibeam Backscatter vs. "Best Estimated" Grazing Angle, EOS Transactions, AGU, 83 (47), Fall Meeting Supplement, Abstract S71C-0296, 2002.

### **Invited Talks and Published Abstracts (2003)**

Brandsottir, B., P. Einarsson, R.S. Detrick, L. A. Mayer, B.R. Calder, N. Driscoll and B. Richter, 2003, Lost in Iceland? Fracture Zone Complications along the Mid-Atlantic Plate Boundary. EOS Transactions, AGU 84 (46), Abstract, T22A-0504.

Detrick, R.S., B. Brandsottir, N. Driscoll, B. Richter, L.A. Mayer, D. Fornari, B.R. Calder and G. Kent, 2003, The Tectonic Evolution of the Tjörnes Fracture Zone, offshore Northern Iceland-Ridge Jumps and Rift Propagation, EOS Transactions, AGU 84 (46), Abstract, T21E-03.

Lewis, C.F.M., Blasco, S.M., Forsyth, D.A., Mayer, L.A., Dijkstra, S., Jacobi, R.D., Todd, B.J., Coakley, J.P. and King, J.W., 2003, Do Quaternary sediments register paleoseismicity or neotectonic rejuvenation of ancient faults beneath Lake Ontario?, Geological Society of America NE Section 38 Annual Meeting, March 2003.

Mayer, L.A., New Directions in Seafloor Mapping and Data Visualization, Invited Talk, Ocean Engineering Seminar Series, University of Rhode Island, 7 February 2003.

Mayer, L.A., Multibeam 101, Invited Talk, NOAA Multibeam Sonar Technology Workshop, 12 February 2003.

Mayer, L.A., Future Directions of Multibeam Technology, Invited Talk, NOAA Multibeam Sonar Technology Workshop, 12 February 2003.

Mayer, L.A., Martha's Vineyard Multibeam Surveys, Invited Talk ONR Mine Burial Workshop, St. Petersburg, FL, 28 January 2003.

Mayer, L.A., Fundamentals of Multibeam Mapping, Invited Talk, NOAA Multibeam Workshop, Silver Spring, MD, 12 February 2003.

Mayer, L.A., Future Directions in Seafloor Mapping, Invited Talk, NOAA Multibeam Workshop, Silver Spring, MD, 12 February 2003.

Mayer, L.A., Visualization Tools for Seafloor Mapping, Invited presentation at workshop, U.S. Hydrographic Conference, Biloxi, MS, 27 March 2003.

Mayer, L.A., The Future of Seafloor Mapping, Invited Presentation, GEBCO Centenary Celebration, Monaco, 17 April 2003.

Mayer, L.A., Jakobbson, M., and Armstrong, A.A., Evaluating U.S. Holdings Relevant to Definition of the Limits of the Continental Shelf, Invited Presentation, International Symposium on Legal and Scientific Aspects of Continental Shelf Limits, Reykjavik, Iceland, 26 June 2003.

Mayer, L.A., Visualization of Geophysical Data Sets, Invited Lecture, Darling Marine Center Summer Institute for Geospatial Data Analysis, 22 July 2003.

Mayer, L.A., Evaluating U.S. Holdings Relevant to Definition of the Limits of the Continental Shelf, U.S. Senate Forum on Law of the Sea, Washington DC, 1 October 2003.

Mayer, L.A., New Paradigms for Multibeam Data Processing, Keynote Lecture, Shallow Survey 2003, Sydney, Australia, 18 October 2003.

Mayer, L.A., Overview of NOAA Technical Needs for Multibeam Mapping, NOAA Multibeam Workshop, Durham, NH, 27 October 2003.

Mayer, L.A., Jeffreys Ledge Multibeam Surveys, Marine Closed Area Working Group, Brown Center, Durham NH, 30 October 2003.

Mayer, L.A., New Directions in Seafloor Mapping and Visualization, Deep Submergence Lab Lecture Series, Woods Hole Oceanographic Institution, Woods Hole, MA, 3-4 November 2003.

Mayer, L.A., B.R. Calder, R. Brennan, L. Gee, S. Smith, C. Ware, L. Alexander, A. Armstrong, R. Arsenault, M. Jurley, F. Mogger, M. Paton, and M. Plumlee, New Paradigms for Hydrographic Data Processing and Products, Invited, Proceedings: 3<sup>rd</sup> Int. Conference. On High-Resolution Surveys in Shallow Water, Sydney, Australia, November 2003.

Mayer, L.A., B.R. Calder and J.S. Schmidt, 2003, High Resolution Multibeam Sonar Survey and Interactive 3-D Exploration of the D-Day Wrecks off Normandy. EOS Transactions, AGU 84 (46) Abstract, ED31E-02.

Mayer, L.A., B. R., Calder, J.S., Schmidt, and C. Malzone, 2003, Providing the third dimension: High-resolution multibeam sonar as a tool for archaeological investigations – an example from the D-Day beaches of Normandy, in Proceedings of the U.S. Hydrographic Conference, Technical Papers CD.

Paton, M., L. Gee, B.R. Calder and L.A. Mayer, The Integrated Seafloor: Efficient Multi-Sensor Processing and Visualization Techniques for Seafloor Mapping Data. Proceedings: 4<sup>th</sup> Australasian Hydrographic Symposium, Christchurch, New Zealand, November 2003.

Rzhanov, Y., L.A. Mayer, D. Fornari, T. Shank, S. Humphris, D. Scheirer, J. Kinsey, and L. Whitcomb, 2003, High-Resolution Photo-Mosaicing of the Rosebud Hydrothermal Vent Site and Surrounding Lava Flows, Galapagos Rift 86W: Techniques and Interpretation. EOS Transactions, AGU 84 (46), Abstract, OS32A-0231.

Rzhanov, Y., G.R. Cutter and L.A. Mayer, Seafloor segmentation based on bathymetric measurements from multibeam echosounder data, Proceedings: 7<sup>th</sup> International Symposium on Signal processing and its Applications, Paris, France, July 2003.

### **Invited Talks and Published Abstracts (2004)**

Mayer, L.A., Visualizing Components of the Climate: Milankovitch Cycles, Invited Lecture, University of Bergen, Norway, 14 January 2004.

Mayer, L.A., Visualization Principles and Applications, Invited Lecture, University of Bergen, Norway, 15 January 2004.

Mayer, L.A., New Tools for Fusion and Visualization of Ocean Mapping Data, Invited Keynote Address, Geological Society of London, London, England, 24 February 2004.

Mayer, L.A., New Directions in Seafloor Mapping and Data Visualization, Invited Seminar, The Bedford Institute of Oceanography Seminar Series, Halifax, NS, Canada, 5 March 2004.

Finney, B.P., Jaeger, J.M., Mix, A.C., Cowan, E.A., Gulick, S.S., Mayer, L.A., Pisias, N.G., Powell, R.D., Prah, F., Stoner, J.S., 2004, High-Resolution Holocene Records of Paleooceanographic and Paleoclimatic Variability from the Southern Alaskan Continental Margin. EOS Transactions, AGU, 85(47), Fall Meeting Supplement, Abstract OS52A-04.

Brandsdottir, B., Richter, B., Riedel, C., Dahm, T., Helgadottir, G., Kjartansson, E., Dertick, R., Magnusson, A., Asgrimsson, A.L., Palsson, B.H., Karson, J., S'mundsson, K., Mayer, L.A., Calder, B.R., Dricoll, N. (2004), Tectonic Details of the Tjornes Fracture Zone, an Onshore-Offshore Ridge-Transform in N-Iceland, EOS Transactions, AGU, 85(47), Fall Meeting Supplement, Abstract T41A-1172.

Gulik, S.S., Powell, R.D., Jaeger, J.M., Cowan, E.A., Mayer, L.A., Mix, A.C., Finney, B.P., Pisias, N.G., Prah, F., Stoner, J.S., 2004, Glacial Advances and Retreats in Tectonic Southeast Alaska During the Little Ice Age and Last Glacial Maximum: Preliminary Results from EW0408, EOS Transactions, AGU, 85(47), Fall Meeting Supplement, Abstract H51A-1099.

Mayer, L.A., Rzhanov, Y., Fornari, D.J., Soule, A., Shank, T.M., Beaulieu, S.E., Schouten, H., Tivey, M., 2004, Mosaicking Techniques for Deep Submergence Vehicle Video Imagery, Applications to Ridge2000 Science, EOS Transactions, AGU, 85(47), Fall Meeting Supplement, Abstract B13A-0163

Fonseca, L., Mayer, L.A., Kraft, B., Brandsdottir, B., Richter, B., 2004, AVO Analysis of Multibeam Backscatter, an example from Little Bay, NH and Skjalfandi Bay, Iceland, EOS Transactions, AGU, 85(47), Fall Meeting Supplement, Abstract OS41C-0483.

### **Invited Talks and Published Abstracts (2005)**

Mapping and Visualizing the Seafloor: Seeing Without Really Being There, Invited Presentation, Annual Meeting of the American Association of Advancement of Science, Washington, DC, 19 February 2005.

New Directions in Seafloor Mapping and Visualization, Invited Presentation, Lamont Colloquium, Lamont Doherty Earth Observatory, NY, 25 February 2005.

Mapping the Unseen: High Tech Imaging of the Seafloor, Invited Presentation, Sea Secrets Lecture Series of the University of Miami and the Ocean Research and Education Foundation, Miami, FL, 16 March 2005.

New Directions in Seafloor Mapping and Data Visualization: Keynote Talk, RESON Multibeam Users Workshop, Tokyo, Japan, 20 April 2005.

New Directions in Seafloor Mapping and Data Visualization: Invited Lecture, National Geospatial Intelligence Agency, Bethesda, MD, 13 July 2005.

Mapping the Unseen: New Directions in Seafloor Mapping and Data Visualization, Bock Memorial Lecture, United States Naval Academy, 18 October 2005.

### **Invited Talks and Published Abstracts (2006)**

Vogt, P.R., Jung, W., Jakobsson, M., Mayer, L.A., and Williamson, M., 2006, The Alpha-Mendelevov Magmatic Province, Arctic Ocean: A New Synthesis, EOS, Transactions of the American Geophysical Union, vol. 87, no. 36, Joint Assembly Supplement Abstract, no. OS31A-02.

Changing Perspectives of the Seafloor: New Approaches to Seafloor Mapping and Data Visualization, Sedimentology Lecture Series, ETH, Zurich, Switzerland, 16 January 2006.

Evans, R.L., Kraft, B.J., and Mayer, L.A., 2006, Use of seafloor electromagnetic and acoustic backscatter data for seafloor classification: an example from Martha's Vineyard, MA, EOS Transactions, American Geophysical Union, vol. 87 (52).

Kraft, B.J., de Moustier, C.P., Calder, B.R., and Mayer, L.A., 2006, High resolution mapping and backscatter studies in support of the Ripples Program: J. Acoust. Soc. Am, vol. 120, p. 3180.

New View of the Gulf of Alaska: Mapping a Transitional Margin, International Symposium on Scientific and Technical Aspects of the of the Outer Limits of the Continental Shelf beyond 200 Nautical Miles, United National University, Tokyo, Japan, 7 March 2006.

An Academic Desktop Survey of Existing U.S. Data Holding Relevant to the Definition of the Continental Shelf Limits, International Symposium on Scientific and Technical Aspects of the of the Outer Limits of the Continental Shelf beyond 200 Nautical Miles, United National University, Tokyo, Japan, 8 March 2006.

New Approaches to Ocean Mapping and Data Visualization, Ocean Seminar Series, the University of Delaware, Newark, DE, 16 March 2006.

Orion-Cyber Infrastructure, Orion-OOI Meeting, Salt Lake City, UT, 28 March 2006.

Ocean Mapping, NSF Advisory Committee-GeoSciences, Washington, DC, 5 May 2006.

New Advances in Ocean Mapping, New England Mapping Association, University of New Hampshire, Durham, NH, 8 June 2006. [Invited]

Ocean Exploration, NOAA-Science Advisory Board, Monterey, CA, 25 July 2006.

Seafloor Mapping in Support of Habitat Studies, NMFS Fish Habitat Workshop, Seattle, WA, 30 August 2006.

Seafloor Mapping and Law of the Sea, Seminar: University of Massachusetts, Boston, MA, 18 October 2006.

Fish Memorial Lecture: New Directions in Seafloor Mapping, University of Rhode Island, Kingston, RI, 3 November 2006.

New Tools for Seafloor Mapping, Lecture New England Consortium, Portsmouth, NH, 5 December 2006. [Invited]

### **Invited Talks and Published Abstracts (2007)**

Gardner, J.V., Mayer, L.A., and Armstrong, A., 2007, High-resolution mapping in support of UNCLOS Article 76: Seeing the seafloor with new eyes, U.S. Hydro Conference, Norfolk, VA, pp.12.

Sweeney, E.M., Gardner, J.V., Mayer, L.A., and Johnson, J.E., 2007, Interpretations of low backscatter anomaly found in 12 kHz data on the U.S. mid-Atlantic lower continental slope, Geological Society of America NE Section Meeting, Durham, NH.

Rzhanov, Y., Mayer, L.A., Beaulieu, S., Soule, A., and Shank, T., 2007, The generation of georeferenced video mosaics in support of submersible and ROV operations, CenSeam Standardization Working Group and Data Analysis Working Group Meeting, Dartington Hall, Plymouth, UK, 15 -17 May 2007.

Delimiting the Outer Boundary of the U.S. Extended Continental Shelf, Invited Talk, NOAA Office of General Counsel 2007 International Law Training Seminar, 31 January 2007.

New Directions in Seafloor Mapping and Data Visualization, Invited Lecture, Portsmouth Propeller Club, 15 February 2007.

New Directions in Seafloor Mapping and Data Visualization, Invited Seminar, University of New England, 16 February 2007.

Mayer, L.A., and Malik, M., Assessing bottom gear impact in the WGOM Closure Area: A multifaceted approach, Invited paper, Western Gulf of Maine Closure Area: 2007 Symposium, Durham NH, 26 March 2007.

Multibeam Echosounding as a Tool for Fisheries Habitat Studies, Mayer, L.A. and Fonseca, L., Invited Lecture, Marine Habitat Mapping Technology Workshop, Anchorage AK, 2 April 2007.

New Views of Seafloors and Tsunamis: Interactive Visualization of Geospatial Data, Invited Seminar, Institute for Pure and Applied Math, UCLA, Los Angeles, CA, 21 May 2007.

Progress on U.S. Mapping in Support of an Extended Continental Shelf, Invited presentation, Task Force on U.S. Extended Continental Shelf, Washington DC, 29 May 2007.

Testimony to House Subcommittee on Fisheries Wildlife and Oceans, Washington, DC, 5 June 2007.

Hydrography: It's not just for charting anymore, Invited presentation, Capitol Hill Oceans Week, 6 June 2007.

Changing Perspectives of the Seafloor, Geologischce Vereinigung e.V., Bremen, Germany, Invited Plenary Lecture, 4 October 2007.

New Directions in Seafloor Mapping and Visualization, InWaterTec: International Conference on Marine Technologies, Kiel, Germany, Invited Plenary Lecture.

Mayer, L.A., K Moran, J Backman, 2008, Invited Talk and published abstract, The Cenozoic Arctic Ocean Unveiled through Scientific Ocean Drilling, EOS Transactions, AGU, 88(52), Fall Meeting Supplement, Abstract PP43D-02.

Gardner, J.V., Mayer, L.A. and Armstrong, A.A., 2007, Multibeam Bathymetry Mapping for U.S. UNCLOS Concerns: A Gold Mine for Marine Geology, EOS Transactions, AGU, 88(52), Fall Meeting Supplement, Abstract OS53A-0965.

M.A. Malik, J.M. Licciardi, L.G. Ward, L.A. Mayer, 2007, Glacial Features in the Western Gulf of Maine Inferred From High Resolution Bathymetric Data, EOS Transactions, AGU, 88(52), Fall Meeting Supplement, Abstract U31A-0005.

### **Invited Talks and Published Abstracts (2008)**

Mayer, L.A., UNH Desktop Study and Bathymetric Data Collection in the Arctic Ocean, Invited Talk, State Department ECS Taskforce Arctic Geology Workshop, Arlington, VA, 31 January 2008.

Mayer, L.A., Integrated Ocean Mapping? Keynote address at Interagency Working Group on Ocean and Coastal Mapping, National Ocean and Coastal Mapping, Strategic Action Plan Workshop, Dania Beach, FL, 26 February 2008.

Mayer, L.A., Initial Assessment of Pacific Areas in UNH Desktop Study and Why Foot of the Slope is the Critical Factor, ECS Taskforce Pacific Geology Workshop, Honolulu, HI, 22 April 2008.

Mayer, L.A., Seafloor Characterization, Invited Talk, Geoscience Australia, Canberra, Australia, 30 April, 2008.

Mayer, L.A., Mapping the Uncharted Arctic, Invited Talk, National Defense University, National War College Symposium on National Security, Climate Change and the Arctic Frontier, 13 May 2008.

Mayer, L.A., Gardner, J.V. and Armstrong, A.A., U.S. Efforts to Delineate its Extended Continental, Invited Lecture, International Geological Congress, Oslo, Norway, 6 August 2008.

Mayer, L.A., Arctic Mapping in Support of Law of the Sea, Invited Lecture, Southwest School of Law, Los Angeles, CA, 3 October 2008.

Mayer, L.A., Recovering the TRIFFID and other Sailboat Adventures, Invited Lecture, Mark Wimbush Symposium, University of Rhode Island, 17 October 2008.

Mayer, L.A., Initial Assessment Bering Sea and Gulf of Alaska in UNH Desktop Study and Potential Implications of the Statement of Understanding, Invited Talk, ECS Taskforce Pacific Geology Workshop, Menlo Park, CA, 3 December 2008.

Mayer, L.A. and Jakobsson, M., Seafloor Mapping in the High Arctic: The Challenges and the Joys, Plenary Talk, Arctic Change 2008, Quebec City, PQ, Canada, 11 December 2008.

Mayer, L.A., Mapping the Arctic Ocean for science and country: Recent results and availability of bathymetric data from the Chukchi and Beaufort Seas, Invited Talk, Arctic Research: Goals, Updates and Opportunities, Arctic Research Commission Town Hall Meeting, American Geophysical Union, San Francisco, CA, 13 December 2008.

Trusel, L.D., B.A. Willems, R.D. Powell, L.A. Mayer, 2008, Quantification of Glacimarine Sediment Yields Using Multibeam Sonar in Alaskan Fjords, EOS Transactions, AGU, 89(53), Fall Meeting Supplement, Abstract C11B-0508.

Mayer, L.A., K. Brumley, A. Andronikov, D.N. Chayes, A.A. Armstrong, B.R. Calder, J.K. Hall, W.C. Clyde, W.A. Bothner, J.V. Gardner, 2008, Recent mapping and sampling on the Chukchi Borderland and Alpha/Mendeleev Ridge, EOS Transactions, AGU, 89(53), Fall Meeting Supplement, Abstract C11C-0516.

Jakobsson, M., L.A. Mayer, HEALY Scientific Party, ODEN Scientific Party, 2008, Glaciogenic bedforms on the Chukchi Borderland, Morris Jesup Rise and Yermak Plateau: three prolongations of the Arctic Ocean continental margin, EOS Transactions, AGU, 89(53), Fall Meeting Supplement, Abstract C14A-05.

Felzenberg, J.A., L.G. Ward, Y. Rzhanov, J.D. Irish, L.A. Mayer, 2008, Detecting Bedform Migration in Portsmouth Harbor, New Hampshire, USA on Relatively Short Spatial and Temporal Scales, EOS Transactions, AGU, 89(53), Fall Meeting Supplement, Abstract OS21E-1219.

Andronikov, A., S. Mukasa, L.A. Mayer, K. Brumley, 2008, First Recovery of Submarine Basalts from the Chukchi Borderland and Alpha / Mendeleev Ridge, Arctic Ocean, EOS Transactions, AGU, 89(53), Fall Meeting Supplement, Abstract V41D-2124.

Brumley, K., L.A. Mayer, E.L. Miller, B. Coakley, 2008, Dredged Rock Samples from the Alpha Ridge, Arctic Ocean: Implications for the Tectonic History and Origin of the Amerasian Basin, EOS Trans AGU, 89(53), Fall Meeting Supplement, Abstract T43B-2013.



## **Invited Talks and Published Abstracts (2009)**

Trusel, L.D., Powell, R.D., Willems, B.A. and Mayer, L.A., 2009, Inferences into temperate fjord deglaciation from glacial and paraglacial submarine landforms in southeast Alaska, Geological Society of America North-Central Section, 43rd Annual Meeting, 2-3 April 2009.

Mayer, L.A., Continental Shelf Issues: Mounting Tensions and Melting Ice: Exploring the Legal and Political Future of the Arctic, Invited Talk, Vanderbilt University School of Law, Memphis, TN, 6 February 2009.

Mayer, L.A., Arctic ECS Issues: Invited Talk, 22<sup>nd</sup> Annual United States Pacific Command International Military Operations and Law Conference, Auckland, New Zealand, 2 April 2009.

Malik, M., Weirich, J., Russel, C., Stuart, E., Peters, C., Mayer, L.A., and Armstrong, A.A., Okeanos Explorer – Aligning today's technology to a new paradigm of ocean exploration, Invited Talk (delivered by Mayer) FEMME 2009, Lisbon, Portugal, 22 April 2009.

Mayer, L.A., Center for Coastal and Ocean Mapping Activities – A national center for ocean mapping activities, Invited Talk, Portuguese Hydrographic Institute, Lisbon, Portugal, 23 April 2009.

Mayer, L.A., Changing Perspectives of the Seafloor: New Approaches to Seafloor Mapping and Data Visualization, Invited Talk, Geosciences Symposium, Texas A&M University, College Station, TX, 27 April 2009.

Mayer, L.A., Armstrong, A.A., and Gardner J.V., 2009, Mapping in the Arctic in support of a potential U.S. Extended Continental Shelf, U.S. Hydro Conference, Invited Talk and paper on CD, Norfolk, VA, 14 May 2009.

Mayer, L.A., New Tools and Approaches for Ocean (and Atmospheric) Mapping, Keynote Address, NOAA Corps Dining Out, Washington, DC, 16 May 2009.

Mayer, L.A., Mapping and Exploring in a Changing Sea Ice Environment, Invited Talk, 33<sup>rd</sup> Center for Ocean Law and Policy Conference, Changes in the Arctic and the Law of the Sea, Seward, AK, 21 May 2009.

Mayer, L.A., New Tools for Seafloor Mapping: Lifting the Veil, Invited Talk, Capitol Hill Ocean Week, Washington, DC, 10 June 2009.

Mayer, L.A., U.S. Mapping of the Extended Continental Shelf in the Arctic, Invited Talk, 3<sup>rd</sup> Symposium on the Impacts of an Ice-Diminishing Arctic on Naval and Maritime Operations, Annapolis, MD, 11 June 2009.

Mayer, L.A., Invited Keynote, Autonomous Vehicle Applications in Estuaries, Annapolis, MD, 16 June 2009.

Mayer, L.A., U.S. Mapping Activities in the Arctic, Invited Presentation for Assistant Secretary of State Kerry Anne Jones, 30 September 2009.

Mayer, L.A., New Views of the Chukchi Borderland and Alpha/Mendelev Ridge Complex, Invited Presentation, Penrose Conference on Tectonic Development of the Amerasian Basin, Banff, AB, Canada, 5 October 2009.

Mayer, L.A., Mapping in the Arctic, Invited presentation to National Geographic Society Advisory Board for OCEANUS TV Series, 27 October 2009.

Mayer, L.A., U.S. ECS Activities in the Arctic, Invited Presentation, Canadian, U.S., Russian and Danish Joint Meeting on Arctic ECS Activities, Halifax, NS, Canada, 17 November 2009.

Mayer, L.A., Requirements for UNCLOS Article 76, Invited Presentation, U.S. ECS Task Force Data Management Workshop, Durham, NH, 8 December 2009.

### **Invited Talks and Published Abstracts (2010)**

Mayer, L.A., Law of the Sea and Mapping the Extended Continental Shelf in the Arctic, Keynote Presentation, Alaska Marine Science Symposium, Anchorage, AK, 20 January 2010.

Mayer, L.A., Adding the Third Dimension: High-Resolution Multibeam Sonar as a Tool for Archaeological Investigations, Invited Talk, U.S. Naval Academy, Annapolis MD, 9 March 2010.

Mayer, L.A., Marine Spatial Planning: An Academic Perspective, Consortium of Ocean Leadership Public Policy Forum, Panel Moderator and Presenter, Washington, DC, 10 March 2010.

Mayer, L.A., Mapping the Unseen: New Approaches to Ocean Exploration, Invited Lecture, UNH College of Engineering and Physical Sciences Alumni Association, Durham, NH, 29 March 2010.

Mayer, L.A., Mapping the Unseen: New Approaches to Seafloor Mapping and Ocean Exploration, Invited Lecture, College of Charleston, Charleston SC, 2 April 2010.

Mayer, L.A., Seafloor Mapping and the Law of the Sea, Invited Talk, University of Delaware, Newark, DE, 22 April 2010.

Mayer, L.A., Testimony before the Subcommittee on Insular Affairs, Oceans and Wildlife of the Natural Resources Committee Legislative Hearing on H.R. 2864 – Congress, Washington, DC, 6 May 2010.

Mayer, L.A. and Lobecker, E., Current Status of Multibeam Sonar Acquisition and Processing on the NOAA Vessel *Okeanos Explorer*, Invited Presentation, NSF Workshop on Multibeam Sonar Operations, NSF HQ, Arlington, VA, 16 June 2010.

Mayer, L.A., The Center for Coastal and Ocean Mapping and Deepwater Horizon, Invited presentation to the Board of Trustees, University of New Hampshire, Durham, NH, 24 June 2010.

Mayer, L.A., Marine Geology, Climate Change and Law of the Sea – a series of lectures at the Rhodes Academy of Ocean Policy and Law, Rhodes, Greece, 28 June-1 July 2010.

Mayer, L.A., Subsurface Monitoring Activities in Support of Deepwater Horizon, Tele-presentation to Congressional Staffers from E/V *Nautilus*, 24 August 2010.

Mayer, L.A., UNH/CCOM Response to the Deepwater Horizon MC252: Subsurface Monitoring, Invited presentation to Senate Staffers, Capitol Building, Washington DC, 24 September 2010.

Mayer, L.A., Mapping the Unseen: New Approaches to Ocean Exploration, Invited Five Colleges Lecture, University of Massachusetts Amherst, Amherst, MA, 25 October 2010.

Mayer, L.A., Delineation of the Continental Shelf in the Arctic, Invited Lecture, Canadian Council on International Law, Ottawa ON, Canada, 30 October 2010.

Mayer, L.A., New Capabilities in Ocean Mapping and Data Visualization, Invited Lecture, International Meeting on AUVs and Sensor Capabilities, Waikoloa, HI, 9 November 2010.

Mayer, L.A., Delineating the Continental Shelf in the Arctic, Invited Lecture, Preserving the Environment of the Arctic Region, Beckman Center of the National Academy of Sciences, Irvine, CA, 12 November 2010.

Weber, Thomas, C., Mayer L.A., De Robertis, A., Wilson, C.D., Greenaway, S., Smith, S., and Rice, G., 2011, Acoustic Observations in Support of the Response to the Deepwater Horizon Oil Spill, Invited Talk, 2<sup>nd</sup> Pan-American/Iberian on Acoustics, Cancun, Mexico, 17 November 2010.

Mayer, L.A., Research Activities at the Center for Coastal and Ocean Mapping, University of New Hampshire, Invited Lecture, National University of Singapore, Singapore, 23 November 2010.

Mayer, L.A., Deepwater Horizon and the Arctic: Is There a Need for International Regulation? Invited Lecture, Globalization and Law of the Sea, Washington, DC, 3 December 2010.

Mayer, L.A., Weber, T.C., Gardner, J.V., Malik, M., Doucet, M., and Beaudoin, J., More than the Bottom: Multibeam Sonars and Water-column Imaging, Invited Lecture, American Geophysical Union Meeting, San Francisco CA, 13 December 2010.

Mosher, D.C., Shimeld, J., Jackson, R., Hutchinson, D.R., Chapman, B., Chian, D., Childs, J.R., Mayer, L.A., Edwards, B.D., and Verhoef, J., 2010, Sedimentation in Canada Basin, Western Arctic Abstract T31A-2126, presented at 2010 Fall Meeting, AGU, San Francisco, CA, 13-17 December 2010.

Hutchinson, D.R., Mosher, D.C., Shimeld, J., Jackson, R., Chian, D., Edwards, B.D., Hart, P.E., Mayer, L.A., A new look at Northwind Ridge: implications for the history of the Canada Basin, Abstract T31A-2128, presented at 2010 Fall Meeting, AGU, San Francisco, CA, 13-17 December 2010.

Gottlieb, E.S., Miller, E.L., Andronikov, A.V., Brumley, K., Mayer, L.A., Mukasa, S.B., 2010. Cretaceous Arctic magmatism: Slab vs. plume? Or slab and plume? Abstract T31A-2139, presented at 2010 Fall Meeting, AGU, San Francisco, CA, 13-17 December 2010.

Brumley, K., Miller, E., Mayer, L.A., Andronikov, A., Wooden, J.L., Dumitru, T.A., Elliott, B., Gehrels, G.E., Mukasa, S.B., 2010, Petrography and U-Pb detrital zircon geochronology of metasedimentary strata dredged from the Chukchi Borderland, Amerasia Basin, Arctic Ocean, Abstract T31A-2144, presented at 2010 Fall Meeting, AGU, San Francisco, CA, 13-17 December 2010.

## **Invited Talks and Published Abstracts (2011)**

Battle for the Arctic? 2011, Keynote Speaker, Heritage Dinner, Seacoast Science Center, Rye, NH, 10 February 2011.

Mayer, L.A., 2011, Arctic Marine Research: The Perspective of a U.S. Practitioner, Invited Talk, International Conference on Arctic Marine Science, International Law and Climate Protection, hosted by the German Federal Foreign Office and Ministry of Foreign Affairs of Finland, Berlin, Germany, 17 March 2011.

Mayer, L.A., 2011, Mapping in the Gulf of Mexico after the Deepwater Horizon Spill, Invited Lecture, Ministry of Marine Affairs and Fisheries, Indonesia, 7 April 2011.

Mayer, L.A., 2011, Ocean Mapping: A Fundamental Tool for Ocean Exploration, Invited Lecture, BPPT (Agency for Assessment and Advancement of Technology), Jakarta, Indonesia, 8 April 2011.

Mayer, L.A., 2011, Hydrographic Science and the Deepwater Horizon, Keynote Address, U.S. Hydrographic Conference, 26 April 2011.

Mayer, L.A., Status of U.S. Arctic Mapping Activities, Invited Talk, Arctic-Antarctic Mapping, Stockholm, Sweden, 3 May 2011.

Mayer, L.A., Status of U.S. Arctic Mapping Activities, Invited Talk, Navigation, Hydrography and Oceanography: Priorities of Development and Innovations of Maritime Activities, NHO-2011, St. Petersburg, Russia, 18 May 2011.

Mayer, L.A., New Approaches to Seafloor Mapping: From D-Day to Deepwater Horizon, Keynote Public Lecture, Oceans Week, Halifax, NS, Canada, 1 June 2011.

Mayer, L.A., The Continental Shelf and Sea Level Change, Invited Talk, International Conference on Maritime Boundary Diplomacy, Bali, Indonesia, 23 June 2011.

Mayer, L.A., Law of the Sea and Mapping the Extended Continental Shelf in the Arctic, Invited Lecture, Roger Williams Law School, 11 October 2011.

Mayer, L.A., Ocean Mapping and the Deepwater Horizon Spill, Invited Lecture, URI Graduate School of Oceanography Lecture Series, 14 October 2011.

Mayer, L.A., Adventures in Arctic Mapping, Dinner Lecture, UNH Foundation, 9 November 2011.

Mayer, L.A., Status of U.S. Bathymetric Mapping in the Arctic, Invited Lecture, A-5 Arctic Summit, Copenhagen, Denmark, 16 November 2011.

Mayer, L.A., Ocean Mapping and the Deepwater Horizon Oil Spill, Invited Lecture., U.S./Japan Natural Resources Subcommittee on Seafloor Mapping, Boulder, CO, 1 December 2011.

Brumley, K., E L. Miller, L.A. Mayer, J.L. Wooden, T.A. Dumitru, Petrography and U-Pb zircon geochronology of Caledonian age orthogenesis dredged from the Chukchi Borderland, Arctic Ocean, Abstract T51K-07, presented at Fall Meeting, AGU, San Francisco, CA, 5-9 December 2011.

Bell, K.L., R.D. Ballard, D.F. Coleman, C. Roman, M.L. Brennan, T. Turanli, M. Duman, S. Carey, P. Nomikou, M. Marani, M. Rosi, J.A. Austin, M. Canals, J. Karson, L.A. Mayer, Y. Makovsky, *New Frontiers in Ocean Exploration: The 2011 E/V Nautilus Field Season*, Abstract OS21A-1570, presented at the Fall Meeting, AGU, San Francisco, Calif., 5-9 December 2011.

### **Invited Talks and Published Abstracts (2012)**

Mayer, L.A., *From Whence We've Come and Where We Might Be Going*, Keynote Address, *Shallow Survey 2012*, Wellington, New Zealand, 20 February 2012.

Mayer, L.A., *Extended Continental Shelf in the Arctic*, Invited Talk, ArcticNet Workshop on *Maritime Boundaries in the Arctic*, Salt Spring Island, BC, Canada, 2 March 2012.

A. Bowen, M. Jakuba, D. Yoerger, C. German, J.C. Kinsey, L.L. Whitcomb, and L.A. Mayer. *Lightly tethered unmanned underwater vehicle for under-ice exploration*. In *IEEE Aerospace Conference*, 12 p., March 2012.

Mayer, L.A., *New Directions in Ocean Mapping: From D-Day to Deepwater Horizon*, Invited Talk, *Eminent Lecture Series*, University of South Florida, Tampa, FL, 5 April 2012.

Mayer, L.A., *Mapping the Continental Shelf in a Changing Arctic*, Invited Lecture, *Leadership for the Arctic Conference*, United States Coast Guard Academy, New London, CT, 12 April 2012.

Mayer, L.A., *The Meaning of Natural Prolongation in Article 76 of the Law of the Sea Treaty*, Invited Talk, *State Department ECS Technical Workshop*, Woods Hole, MA, 17 April 2012.

Mayer, L.A., *Extended Continental Shelf on the Atlantic Margin*, Invited Talk, *State Department ECS Technical Workshop*, Woods Hole, MA, 17 April 2012.

Mayer L.A., *Adventures in Ocean Mapping*, Invited Talk, *UNH Foundation Luncheon*, 2, Portsmouth, NH, June 2012.

Mayer, L.A., *Future Trends in Seafloor and Ocean Mapping*, Invited Talk, *UNOLS Fleet Improvement Committee*, Boston, MA, 5 June 2012.

Mayer, L.A., *Lessons Learned from Deepwater Horizon: Perspectives from the Field*, Invited Talk, *The Regulation of Continental Shelf Development Conference*, Halifax, NS, Canada, 22 June 2012.

Mayer, L.A., *Exploration of Eratosthenes Seamount on the E/V Nautilus*, Invited Talk, *Ocean Exploration Trust Educators at Sea Symposium*, Narragansett RI, 25 June 2012.

Mayer, L.A., *Atlantic Margin Extended Continental Shelf*, Invited Talk, *State Department Extended Continental Shelf Scenario Reckoning Workshop*, Washington DC, 28 June 2012.

Mayer, L.A., *Law of the Sea and Mapping in the Arctic (and elsewhere)*, Invited Talk, *National Academy of Engineering*, Washington DC, 1 October 2012.

Mitchell, G., Mayer, L.A., Rzhhanov, Y., OCEANS 2012, MTS/IEEE, Exploring Eratosthenes Seamount with Deep Submergence Vehicles Telepresence and the E/V *Nautilus*, Hampton Roads, VA, 14 October 2012.

Mayer, L.A., 2012, Ocean Mapping: Exploring the Secrets of the Deep, Keynote Lecture, Bedford Institute of Oceanography 50<sup>th</sup> Anniversary Lecture Series, Halifax, NS, Canada, 22 October 2012.

Mayer, L.A., Armstrong, A.A., Hutchinson, D., Van Pay, B., and Moore, B., Status of U.S. Mapping Activities in the Arctic, Invited Talk, International Scientific Conference on the Extended Continental Shelf in the Arctic, Portsmouth, NH, 6 November 2012.

Mayer, L.A., 2012, Mapping in the Arctic in Support of Law of the Sea: Implications of Climate Change, Invited Talk, 9<sup>th</sup> Marine Law Symposium, Roger Williams Law School, Bristol, RI, 14 November 2012.

Mayer, L.A., 2012, Call a Doctor: A New Paradigm for Ocean Exploration, Invited Talk, Ocean Exploration Caribbean Workshop, Miami FL, 16 November 2012.

Mosher, D.C., Shimeld, J., Hutchinson, D., Jackson, R., Chian, D., Lebedeva-Ivanova, N., Oakey, G., Evangaleto, J, Li, Q., Funck, T., Mayer, L.A., Verhoef, J., and Forbes, S., 2012, Re-evaluating Amerasian Basin tectonics and sedimentation with new geophysical data, International Geologic Congress, Brisbane, Australia.

L.L. Whitcomb, A. Bowen, D.R. Yoerger, C.R. German, J.C. Kinsey, L.A. Mayer, M. Jakuba, D. Gomez-Ibanez, C.L. Taylor, C. Machado, J.C. Howland, C.L. Kaiser, M. Heintz, Development of Nereid-UI: A Remotely Operated Underwater Vehicle for Oceanographic Access Under Ice, Abs. # C13E-0654, presented at Fall Meeting, AGU, San Francisco, CA, 3-7 Dec. 2012.

A. Abramova, D. Monahan, L.A. Mayer, T.C. Lippmann, B.R. Calder, Quality Assessment of GEBCO 08, Smith and Sandwell and SRTM30 Plus Grids in the Arctic, Abs. # OS51D-1905, presented at Fall Meeting, AGU, San Francisco, CA, 3-7 December 2012.

K.L. Bell, R.D. Ballard, M.L. Brennan, N.A. Raineault, Ti.M. Shank, L.A. Mayer, C. Roman, G.A. Mitchell, D.F. Coleman, Exploration of the Black, Aegean, and Mediterranean Seas Aboard E/V *Nautilus*, Abs. # OS51D-1911, presented at the Fall Meeting, AGU, San Francisco, CA, 3-7 December 2012.

A. Bowen,., M. Jakuba, D. Yoerger, L.L. Whitcomb, J.C. Kinsey, L.A. Mayer, and C.R. German, Nereid UI: A light-tethered remotely operated vehicle for under-ice telepresence. In Proceedings Arctic Technology Conference, Houston .TX, December 2012.

### **Invited Talks and Published Abstracts (2013)**

Mayer, L.A., Ocean Mapping, Invited Talk, Chief of Naval Operations Strategic Study Group, Naval War College, Newport, RI, 12 February 2013.

Mayer, L.A., The Arctic and the Gulf Oil Spill: What if Deepwater Horizon happened in the Arctic? Invited Talk, Seacoast Science Center Heritage Dinner Series, Rye, NH, 28 March 2013.

Mayer, L.A., An “Almost Old” Man’s Look at from Whence We’ve Come and Where we Might be Going, Keynote Address FEMME 2013, Boston, MA, 17 April 2013.

Mayer, L.A., New Directions in Visualizing the Ocean: From D-Day to Deepwater Horizon to Law of the Sea, Invited Lecture, Worcester State University, Worcester, MA, 25 April 2013.

Mayer, L.A., U.S. Seabed and Habitat Mapping Initiatives, Invited Lecture, The Atlantic – A Shared Resource, Galway, Ireland, 23 May 2013.

Mayer, L.A., Mapping the Extended Continental Shelf in a Changing Arctic, Invited Lecture, 5<sup>th</sup> Symposium on the Impacts of an Ice-Diminishing Arctic on Naval and Maritime Operations, Navy Memorial Washington DC, 17 July 2013.

Mayer, L.A. Ocean Mapping: Exposing the Secrets of the Deep, Invited Public Lecture, Aquarium of the Pacific Ocean Exploration Lecture Series, Long Beach, CA, 29 August 2013, [http://www.aquariumofpacific.org/multimedia/player/lecture\\_archive\\_larry\\_mayer](http://www.aquariumofpacific.org/multimedia/player/lecture_archive_larry_mayer)

Mayer, L.A., Law of the Sea and Mapping in the Arctic (and elsewhere), Invited Lecture, Arctic Studies Group, Naval War College, Newport RI, 30 September 2013.

Mayer, L.A., Law of the Sea and Mapping the Extended Continental Shelf in the Arctic, Invited Lecture, Roger Williams School of Law, Bristol, RI, 30 September 2013.

Mayer, L.A., Law of the Sea and Mapping the Continental Shelf in the Arctic, Invited Plenary, Arctic Circle Assembly, Reykjavik, Iceland, 13 October 2013.

Mayer, L.A., Deepwater Horizon and the Arctic – An Academic Practitioner’s Perspective, Invited Lecture, Arctic Circle Assembly, Reykjavik, Iceland, 13 October 2013.

Mayer, L.A., Armstrong, A.A., and Brumley, K., U.S. Bathymetric Mapping and Sampling Activities in the Arctic, Arctic V Meeting, Stavanger, Norway, 5 November 2013.

Jakobsson, M., Mayer, L.A., Marcussen, C., Scientific Discoveries in the Central Arctic Ocean Based on Seafloor Mapping Carried Out to Support Article 76 Extended Continental Shelf Claims (Invited), Abs. #OS12B-03, presented at the Fall Meeting, AGU, San Francisco, CA, 9-13 December 2013.

Brumley, K.J., Mukasa, S.B., O'Brien, T.M., Mayer, L.A., Chayes, D.N., Dredged Bedrock Samples from the Amerasia Basin, Arctic Ocean, Abs. #OS13B-1707, presented at the Fall Meeting, AGU, San Francisco, CA, 9-13 December 2013.

Englert, C.M., Butkiewicz, T., Mayer, L.A., Schmidt, V., Beaudoin, J., Trembanis, A.C., Duval, C. 2013, Designing improved sediment transport visualizations binding a GIS data model with human perception research, OCEANS 2013 MTS/IEEE San Diego Conference: An Ocean in Common, San Diego, CA, Published.

Englert, C.M., Butkiewicz, T., Mayer, L.A., Schmidt, V., Beaudoin, J., Trembanis, A.C., Duval, C. 2013, Designing improved sediment transport visualizations Binding a GIS data model with human perception research, OCEANS 2013 MTS/IEEE San Diego Conference: An Ocean in Common, San Diego, CA, Published.

Sowers, D., Mayer, L.A., Gardner, J.V., Utilizing New Multibeam Sonar Datasets to Map Potential Locations of Sensitive Benthic Habitats in the U.S. Atlantic Extended Continental Shelf, Abs. #OS13B-1709, presented at the Fall Meeting, AGU, San Francisco, CA, 9-13 December 2013.

O'Brien, T., Brumley, K.J., Miller, E.L., Mayer, L.A., The Caledonian suture in the high Arctic? New Data from the Chukchi Borderland, Amerasia Basin, Abs. #T13B-2522, presented at the Fall Meeting, AGU, San Francisco, CA, 9-13 December 2013.

DuVal, C., Trembanis, A., Beaudoin, J., Schmidt, V., and Mayer, L.A., Hurricane Sandy's Fingerprint: Ripple Bedforms at an Inner Continental Shelf Sorted Bedform Site, Abs. #OS31A-1695, presented at the Fall Meeting, AGU, San Francisco, CA, 9-13 December 2013.

Trembanis, A., Beaudoin, J., DuVal, C., Schmidt, V., and Mayer, L., Morphodynamic Impacts of Hurricane Sandy on the Inner-shelf (Invited), Abs. #OS33C-03, presented at the Fall Meeting, AGU, San Francisco, CA, 9-13 December 2013.

Whitcomb, L., Bowen, A., Yoerger, D., German C., Kinsey, J., Mayer, L.A., Jakuba, M., Gomez-Ibanez, D., Taylor, C., Machado, C., Howland, J., Kaiser, C., Heintz, M, Pontbriand, C., Suman, S., and O'Hara, L., Design and Fabrication of Nereid-UI: A Remotely Operated Vehicle for Oceanographic Access Under Ice, Abs. #C31B-0646, presented at the Fall Meeting, AGU, San Francisco, CA, 9-13 December 2013.

#### **Invited Talks and Published Abstracts (2014)**

Mayer, L.A., Armstrong, J.V., and Calder, B.R., U.S. Mapping Activities in the Arctic, Invited Lecture, Arctic Hydrographic Commission Science Day, Durham, NH, 28 January 2014.

Mayer, L.A., The Chart of the Future, Testimony before the Subcommittee on Coast Guard and Maritime Transportation Committee on Transportation and Infrastructure, U.S. House of Representatives, Washington, DC, 4 February 2014.

Mayer, L.A., Exploring the Secrets of the Deep, New Tools for Ocean Mapping, Invited Lecture, Texas A&M University Institute for Nautical Archeology, College Station, TX, 18 February 2014.

Mayer, L.A., Mapping to Establish the Extended Continental Shelf under Article 76, Invited Plenary Lecture, International Cable Protection Commission, Dubai, United Arab Emirates, 20 March 2014.

Mayer, L.A., Mapping in the High Arctic, Invited Plenary Lecture, Intl. Cable Protection Commission, Dubai, United Arab Emirates, 20 March 2014.

Mayer, L.A., Seafloor Mapping For Marine Policy, Invited Lecture, Marine Policy Seminar, David Kaiser, UNH, Durham NH, 27 March 2014.

Mayer, L.A., Recent Changes in Arctic Ice Cover from First Hand Experience, Invited Lecture, European Geophysical Union GIFT Symposium, Vienna, Austria, 30 April 2014.



Mayer, L.A., and Butkiewicz, T., UNH CCOM Visualization Activities, Invited Showcase Exhibition, U.S. Navy Technology Advancement for the Next Generation Workshop, Pearl Harbor, HI, 5 May 2014.

Mayer, L.A., The Arctic Continental Shelf: The Evolving Morphologic Context, Invited Lecture, Challenges of the Changing Arctic Continental Shelf, Navigation, and Fisheries, COLP, Bergen, Norway, 26 June 2014.

Di Stefano, M., Masetti, G., and Mayer, L.A., Use of seafloor stereo-images to validate automatic classification of benthic habitats, GeoHab 2014, Lorne, Victoria, Australia, 5-9 May 2014, Published conference proceedings.

Mayer, L.A., Law of the Sea and Mapping in the Arctic (and elsewhere), Invited Lecture, Arctic Studies Group, Naval War College, Newport, RI, 14 October 2014.

Mayer, L.A., Law of the Sea and Mapping the Extended Continental Shelf in the Arctic, Invited Lecture, Roger Williams School of Law, Bristol, RI, 14 October 2014.

Mayer, L.A., Arctic Infrastructure and Operational Challenges: The Perspective of a U.S. Academic Researcher, Invited Presentation, Center for New American Security, Washington, DC, 22 October 2014.

Mayer, L.A., Understanding Article 76 and the Challenges of Working in the Arctic, Invited Lecture, Centre for International Law, National University of Singapore, Singapore, 25 November 2014.

Mayer, L.A., Extended Continental Shelf Mapping in the Arctic, Keynote Address, International Symposium on Frontier Mapping from Extended Continental Shelf Studies, National Taiwan University, Taipei, Taiwan, 3 December 2014.

Mayer, L.A., and Gardner, J.V., What a Difference a Swath Makes!, Abs. #OS34A-02, presented at the Fall Meeting, AGU, San Francisco, CA, 15-19 December 2014.

Whitcomb, L.L., Jakuba, M., German, C.R., Bowen, A., Yoerger, D., Kinsey, J.C., Mayer, L.A., McFarland, C., Suman, S., Bailey, J., Judge, C., Elliott, S., Gomez-Ibanez, D., Taylor, C.L., Machado, C., Howland, J.C., Kaiser, C., Heintz, M., Pontbriand, C., O'Hara, L., McDonald, G., and Boetius, A., Preliminary Polar Sea Trials of Nereid-UI: A Remotely Operated Underwater Vehicle for Oceanographic Access Under Ice, Abs. #C31D-0343, presented at the Fall Meeting, AGU, San Francisco, CA, 15-19 December 2014.

German, C.R., Boetius, A., Whitcomb, L.L., Jakuba, M., Bailey, J., Judge, C., McFarland, C., Suman, S., Elliott, S., Katlein, C., Arndt, S., Bowen, A., Yoerger, D., Kinsey, J.C., Mayer, L.A., Nicolaus, M., Laney, S., Singh, H., Maksym, T.L., and PS86 Scientific Research Team, 2014, First scientific dives of the Nereid Under Ice Hybrid ROV in the Arctic Ocean. (Invited), Abs. #B23G-07, presented at the Fall Meeting, AGU, San Francisco, CA, 15-19 December 2014.

Freire, F., Gyllencreutz, R., Greenwood, S., Mayer, L.A., and Jakobsson, M., High-resolution Mapping of Offshore and Onshore Glaciogenic Features in Melville Bay, Northwestern Greenland, Abs. #OS31A-0973, presented at the Fall Meeting, AGU, San Francisco, CA, 15-19 December 2014.

Mosher, D.C., Jakobsson, M., Gebhardt, C., and Mayer, L.A., Mapping the Surficial Geology of the Arctic Ocean, Abs. #OS33D-07, presented at the Fall Meeting, AGU, San Francisco, CA, 15-19 December 2014.

### **Invited Talks and Published Abstracts (2015)**

Mukasa, S.B., Mayer, L.A., Aviado, K., Bryce, J., Andronikov, A., Brumley, K., Blichert-Toft, J., Petrov, O., and Shokalsky, S. 2015, Alpha / Mendeleev Ridge and Chukchi Borderland <sup>40</sup>Ar/<sup>39</sup>Ar Geochronology and Geochemistry: Character of the First Submarine Intraplate Lavas Recovered from the Arctic Ocean Geophysical Research Abstracts vol. 17, EGU2015-8291-2, 2015.

Mayer, L.A., Acoustic Mapping of Gas Seeps: From Deep Water Horizon to the East Siberian Arctic, Invited Lecture, Bigelow Marine Laboratory, Boothbay Me, 12 February 2015

Mayer, L.A., Understanding Article 76 and its Application in the Arctic, Invited Lecture Yale School of Law, New Haven, Conn. 18 February 2015

Mayer, L.A., Armstrong, A., Gardner, J.V., and Calder, B., U.S. Extended Continental Shelf Mapping 2002 – 2015, Invited Presentation, Ocean Exploration Advisory Board, Narragansett, R.I., 1 October, 2015

Mayer, L.A., Law of the Sea and Mapping in the Arctic (and elsewhere), Invited Lecture, Arctic Studies Group, U.S. Naval War College, Newport, RI, October 2015.

Mayer, L.A., Law of the Sea and Mapping the Extended Continental Shelf in the Arctic, Invited Lecture, Roger Williams School of Law, October 2015.

Mayer, L.A., Law of the Sea and Mapping the Extended Continental Shelf, Invited Lecture, Univ of R.I., School of Marine Policy, October 2015.

Mayer, L.A., Gazing into the Crystal Ball: The Future of Ocean Mapping, Invited Plenary Talk, Ocean Innovations, St. John's Newfoundland, October 29, 2015.

Mayer, L.A., The Arctic and the Gulf Oil Spill: What if Deepwater Horizon Happened in the Arctic? Invited Lecture, River Woods, Exeter, N.H., 2 November 2015.

Mayer, L.A., Acoustic Mapping of Gas Seeps: From Deep Water Horizon to the East Siberian Arctic, Invite Lecture, K. Douglas Nelson Colloquium, Syracuse University, Syracuse, NY, 12 November 2015.

Mayer, L.A., Weidner, E., Jerram, K., Weber, T., Jakobsson, M., Chernykh, D., Ananiev, R., Mohammad, R., Semiltov, I., A Multi-Frequency Look at Gas Seeps on the East Siberian Margin, Abs. #C43A-0779, presented at the Fall Meeting, AGU, San Francisco, CA, 14-18 December 2015.

Jakobsson, M., O'Regan, M., Kirchner, N., Ananiev, R., Bachman, J., Barrientos, N., Chernykh, D., Coxall, H., Cronin, T., Koshunikov, A., Lobkowsky, A., Mayer, L., Noormets, R., Muschitiello, F., Nilsson, J., Pearce, C., Semiletov, I., Stranne, C., On the Existence of an East-Siberian-Chukchi Ice Sheet: New Insights from the SWERUS-C3 Expedition 2014, Abs. #C43A-0775, presented at the Fall Meeting, AGU, San Francisco, CA, 14-18 December 2015.

## **Invited Talks and Published Abstracts (2016)**

Mayer, L.A., From Deepwater Horizon to the Arctic Ocean: UNH Exploring the Mysteries of the Deep, Invited Lecture Harbor Branch Oceanographic Institution. 9 February 2016.

Mayer, L.A., Understanding Article 76 and its Application in the Arctic, Invited Lecture Yale School of Law, New Haven, Conn. 15 February 2016.

Mayer, L.A., Ocean Mapping: We're Remote Sensors Too!, Invited Keynote Address, American Society of Photogrammetry and Remote Sensing Annual Meeting, Ft. Worth, Texas, 13 April 2016.

Mayer, L.A., Ruminations on the Future of Ocean Mapping, Keynote Lecture, GeoHab Conference, Winchester U.K., 3 May 2016.

Mayer, L.A., U.S. Extended Continental Shelf Mapping in the Arctic (and a Bit More), Invited Lecture, IBCAO-IBCSO Meeting, Monaco, 12 June 2016.

Mayer, L.A., The Oceans Are So Big But Our Footprints Are So Small, Keynote Lecture, Forum for Future of Ocean Floor Mapping, Monaco, 15 June 2016.

Mayer, L.A., Bathymetric Data Collection in the Arctic and the Grounding of the Clipper Adventurer, Invited Lecture, IONS Workshop, Arctic Domain Awareness Center, Anchorage Alaska, 21 June 2016

Mayer, L.A., Setting the Context: The Scientific Aspects of Article 76, Invited Lecture, Legal Order in the World's Oceans: UN Convention on the Law of the Sea, United Nations Headquarters, N.Y.C., 28 June 2016

Mayer, L.A., Oceans, Global Warming and a bit of Law of the Sea, Invited, Distinguished Lecture Series, University of Virginia School of Law: Center for Oceans Law and Policy, Charlottesville, VA., 28 November 2016

Mayer, L.A., Acoustic Mapping of Gas Seeps: From Deepwater Horizon to the East Siberian Margin, Invited, Distinguished Lecture Series, University of Delaware, Newark, DE., 29 November 2016

Mayer, L.A., Arctic Marine Research: A Practitioner's Perspective, Keynote, 2016 UNOLS Annual Meeting, Arlington, VA., 30 November 2016

Raineault, N., Smart, C., Mayer, L.A., Ballard, R.D., Fisher, C.R., Marsh, L., Shank, T., Signs of Recent Volcanism and Hydrothermal Activity Along the Eastern Segment of the Galapagos Spreading Center, Abs. #OS41C-1985, presented at Fall Meeting, AGU, San Francisco, CA, 12-16 December 2016

Weidner, E.F., Mayer, L.A., Jakobsson, M., Chernykh, D., Ananiev, R., Weber, T.C., Jerram, K., Mohammad, R., Semiletov, I.P., Invited, Quantification of Methane Gas Flux and Bubble Fate on the Eastern Siberian Arctic Shelf Utilizing Calibrated Split-beam Echosounder Data, Abs. # OS44A-01, presented at Fall Meeting, AGU, San Francisco, CA, 12-16 December 2016.

Mix, A.C., Jakobsson, M., Andrews, J.T., Jennings, A.E., Mayer, L.A., Anderson, S.T., Brook, E., Ceperley, E., Cheseby, M., Clark, J., Dalerum, F., Dyke, L.M., Einarsson, D., Erkiisson, D.B.,

Frojd, C., Glueder, A., Hedman, U., Heirman, K., Heuze, C., Hogan, K., Holden, R., Padman, J., Pecnerova, P., Reilly, B., Reusche, M., Ross, A., Stranne, C., Marcott, S.A., Muenchow, A., Stoner, J.S., Andresen, C.S., Nicholls, K.W., Holm, C., Jerram, K., Krutzfeld, J., Nicolas, L., Par, L., Lomac-MacNair, K., Madlener, S., McKay, J., Meijer, T., Meiton, A., Brian, M., Mohammed, R., Molin, M., Moser, C., Normark, E., Trinhammer, P., Walczak, M.H., Walczak, P., Washam, P., Karasti, M., Anker, P., The Petermann Glacier Experiment, NW Greenland, Abs. #PP12C-01, presented at Fall Meeting, AGU, San Francisco, CA, 12-16 December 2016.

Mayer, L.A., Jakobsson, M., Mix, A.C., Heffron, E., Jerram, K., Hogan, K., Muenchow, A., Invited, Towards the Complete Characterization of Marine-Terminating Glacier Outlet Systems, Abs. # PP12C-02, presented at Fall Meeting, AGU, San Francisco, CA, 12-16 December 2016.

Jakobsson, M., Hogan, K., Mayer, L.A., Mix, A.C., Jerram, K., Mohammad, R., Stranne, C., Eriksson, B., The history of retreat dynamics of Petermann Glacier inferred from submarine glacial landforms, Abs. # PP13A-2037, presented at Fall Meeting, AGU, San Francisco, CA, 12-16 December 2016.

Hogan, K., Jakobsson, M., Mayer, L.A., Mix, A., Jerram, K., Nielsen, T., Kamla, E., Stranne, C., Eriksson, B., The glacial marine sediment budget of the Nares Strait-Peterman Fjord area since the Last Glacial Maximum, Abs. # PP13A-2040, presented at Fall Meeting, AGU, San Francisco, CA, 12-16 December 2016

### **Invited Talks and Published Abstracts (2017)**

Mayer, L.A., Challenges of Mapping the Deep Ocean: If Only Airborne Laser Bathymetry Worked in 10,000m of Water, Keynote Address, International LIDAR Forum, Denver, CO. 13 Feb. 2017

Mayer, L.A., Acoustic Mapping of Gas Seeps: From Deepwater Horizon to the Arctic, Institute of Ocean Sciences, Victoria, BC, Canada, 12 April 2017

Mayer, L.A., The Chart of the Future, Hydrographic Services Review Panel, Seattle WA, 20 April 2017.

Mayer, L.A., CCOM in the Arctic, Whale Alert Meeting, Nantucket, MA, 1 May 2017.

Mayer, L.A., Exploring the Secrets of the Deep, UNH Foundation Board Emeriti, 4 May 2017.

Mayer, L.A., From Deepwater Horizon to the Arctic: Exploring the Secrets of the Deep, Women's International Forum, United Nations, NY, 2 June 2017.

Mayer, L.A., Exploring the Secrets of the Deep, Capitol Hill Oceans Week, Washington DC, 15 June, 2017.

Mayer, L.A., Status of ECS Activities in the Arctic, Symposium on the Impacts of Diminishing Ice on Naval and Maritime Operations, Washington, D.C., 19 July 2017.

Mayer, L.A., Interactive 4-D Visualization in Support of Ocean Mapping Applications, Gordon Conference on Visualization in Science and Education, Bates College, ME, 8 August 2017.

Mayer, L.A., Presentation at Alternative Futures Symposium – U.S. Navy, Naval War College, Newport, R.I., 20 August 2017.

Mayer, L.A., Research Sometimes Takes Unexpected Directions with Impact on National Needs, Hydrographic Services Review Panel, Portsmouth, NH, 11 September 2017.

Mayer, L.A., Ocean Mapping: Exploring the Secrets of the Deep, Thamsk Lecture, Royal Academy of Sciences, Stockholm, Sweden, 13 September 2017.

Mayer, L.A., Understanding Article 76 and its Application in the Arctic, Harvard Law School, 19 October 2017.

Mayer, L.A., CCOM in the Arctic, School of Marine Science and Ocean Engineering Arctic Symposium, Durham, NH, 8 November 2017.

Mayer, L.A., Surficial Geology and Base of the Slope in the Alaskan Beaufort Margin, Arctic V Meeting, Ottawa, CA, 8 December 2017.

Heffron, E., Mayer, L.A., Jakobsson, M., Hogan, K., J., and Jerram, K., Distribution of an Acoustic Scattering Layer, Petermann Fjord, Northwest Greenland, Abstract OS31B-1355 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 December 2017.

Jakobsson, M., Anderson, L., G., Backman, J., Barrientos, N., Bjork, G.M., Coxall, H., Cronin, T., M., De Boer, A.M., Gemery, L., Jerram, K., Johansson, C., Kirshner, N., Mayer, L.A., Morth, C-M, Nillson, J., Noormets, R., O'Regan, M., Pearce, C., Semiletov, I., and Stranne, C., (2017), The Deglacial to Holocene Paleoceanography of Bering Strait: Results From the SWERUS-C3 Program (Invited), Abstract PP54-02 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 December 2017.

Mayer, L.A., (2017), Seafloor Mapping: We've Come a Long Way – But Still Have Far to Go (Invited), Abstract OS21C-01 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 December 2017.

Raineault, N., Ballard, R.D., Fahy, J., Mayer, L.A., Heffron, E., Krasnosky, K., Roman, C., Schmidt, V.E., Mcleod, A., Bursek, J., Broad, K., (2017), Correlating sea level rise still-stands to marine terraces and undiscovered submerged shoreline features in the Channel Islands (USA) using autonomous and remotely operated systems, Abstract OS33C-06 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 December 2017.

Weidner, E.F., Weber, T.C., and Mayer, L.A., (2017), Implementation of an acoustic-based methane flux estimation methodology in the Eastern Siberian Arctic Sea (Invited), Abstract U13B-13 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 December 2017.

Weidner, E.F., Jakobsson, M., Nycander, J., and Mayer, L.A., (2017), A multi-frequency investigation of the influences of groundwater discharge on hydrocarbon emission and transport in the Baltic Sea, Abstract OS11B-1134 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 December 2017.

## **Invited Talks and Published Abstracts (2018)**

Mayer, L.A., (2018), ASV Activities at CCOM/UNH, United States-Japan Natural Resources Committee Annual meeting, Honolulu, HI, 29 January 2018. Invited.

Mayer, L.A. (2018), The Nippon Foundation – GEBCO Seabed 2030 Program, United States-Japan Natural Resources Committee Annual Meeting, Honolulu, HI., 30 January 2018, Invited.

Mayer, L.A., (2018) Comprehensive and Sustained Ocean Observations: An Essential Component of Understanding Global Change; Keynote talk at the Royal Swedish Academy of Sciences Symposium: “The Oceans in a +2deg World: An Analytic Perspective,” 21 February 2018.

Mayer, L.A., (2018), Acoustic Mapping of Gas Seeps: From Deepwater Horizon to the Arctic, Invited Talk, University of Southern Mississippi, 2 March 2018.

Mayer, L.A., (2018), Extended Continental Shelf Activities in the Arctic, Invited Lecture U.S. Maritime Administration (MARAD), Washington, DC, 23 April 2018.

Mayer, L.A., (2018), Arctic Marine Research and UNCLOS: Challenges from the Perspective of a Practitioner, Invited Lecture, Jebsen Center for Law of the Sea, Tromso, Norway, 4 June 2018.

Mayer, L.A., (2018), Article 76 and the Arctic, Invited Lecture, Jebsen Center for Law of the Sea, Tromso, Norway, 5 June 2018.

Mayer, L.A., (2018), UNCLOS, Article 76 and Arctic, Invited Lecture, U.S. Embassy, Oslo, Norway, 7 June 2018.

Mayer, L.A. (2018), Ocean Mapping: We’ve Come a Long Way Still Have Far to Go, Office of Naval Research Distinguished Lecture, Washington, D.C., 12 June 2018.

Mayer, L.A., (2018), Sonar Imaging and Ocean Mapping, Invited Lecture, Nineteenth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and Law of the Sea “Anthropogenic Underwater Noise,” 18 June 2018.

Mayer, L.A., (2018), Climate Change and the Legal Effects of Sea Level Rise: An Introduction to the Science, Invited Talk, Conference on New Knowledge and Changing Circumstances in Law of the Sea, Reykjavik Iceland, 27 June 2018.

Mayer, L.A. (2018) – Several invited presentations on sea floor mapping and visualization – Office of Net Assessment Committee on the Oceans in 2050, New London Conn, 9-13 July 2018.

Mayer, L.A. (2018), Ocean Mapping: Exploring the Secrets of the Deep, Keynote Lecture – Blue Marble Graphics Annual Users Meeting, Portland, ME, 21 Sept. 2018.

Mayer, L.A., (2018), Understanding Article 76 and its Application in the Arctic, Invited Lecture, Harvard Law School, Boston, MA., 27 September 2018.

Mayer, L.A., (2018), From Deepwater Horizon to the Arctic: Exploring the Secrets of the Deep, Invited Talk, UNH Board of Trustees Emeriti, 28 September 2018.

Mayer, L.A. (2018), North Pacific Regional Data Center Report, Seabed 2030, Invited presentation, Arctic-North Pacific and Antarctic RDACC Meeting, Stockholm, Sweden, 9 October 2018.

Mayer, L.A., (2018), Ocean Mapping: Illuminating the Depths, Keynote Talk – Ocean-Climate-Sustainability Research Frontiers, Berlin, Germany, 22 October 2018.

Mayer, L.A. (2018), Seabed 2030, Invited Talk at NOAA Town Hall Meeting on ASPIRE, AGU Meeting, Washington, D.C., 11 December 2018.

### **Invited Talks and Published Abstracts (2019)**

Mayer, L.A. (2019), Ocean Mapping: Exploring the Rest of the Earth, Invited Lecture Stanford, University, Dept. of Geosciences, 19 February 2019.

Mayer, L.A., (2019), Article 76 of the Law of the Sea Treaty, Invited Lectures, Yale University School of Law, 26 February 2019.

Mayer, L.A., (2019) UNH Center for Coastal and Ocean Mapping/Joint Hydrographic Center, Overview and Accomplishments, Invited talk, Hydrographic Services Review Panel, Washington, D.C., 4 March 2019.

Mayer, L.A., (2019) UNH Center for Coastal and Ocean Mapping/Joint Hydrographic Center, Future Focus Areas, Invited talk, Hydrographic Services Review Panel, Washington, D.C., 4 March 2019.

Mayer, L.A., (2019) Scientific Ocean Drilling: A Long-term View, Keynote Lecture, 25<sup>th</sup> Anniversary of the Bremen ODP/IODP Core Repository, Bremen Germany, 12 March 2019.

Mayer, L.A., (2019) UNH Center for Coastal and Ocean Mapping/Joint Hydrographic Center, Overview of Activities, Presented to the Naval Undersea Warfighters Center., 26 March, 2019.

Mayer, L.A., (2019), A First-Hand Look at a Melting Arctic, Invited Talk, 3<sup>rd</sup> ASIAQ Meeting, Durham N.H., 9 April 2019.

Mayer, L.A., (2019) A Geospatial Context for Everything, Invited talk, 43<sup>rd</sup> Conference of the Center of Ocean Law and Policy, World Maritime University, Malmö, Sweden, 14 May 2019.

Mayer, L.A., (2019), Keynote talk, From Deepwater Horizon to the Arctic Ocean: Exploring the Secrets of the Deep, National Marine Science Educators Annual Meeting, Durham, N.H, 24 July 2019.

Mayer, L.A., 2019, Invited Plenary Flash Talk: The Geospatial Context for all Ocean Observations, Ocean Obs 2019, Honolulu, HI, 16 September 2019.

Mayer, L.A., 2019, Invited Keynote, Accelerating Seabed2030 Progress Through Technological Innovation, Seabed 2030 Vision to Action Symposium, Royal Society of London, London, UK, 22 October 2019.

Mayer, L.A., Keynote Talk: Challenges of Arctic Mapping: A Practitioner's Perspective, National Geospatial Agency, Arctic Maritime Domain Awareness Symposium, Springfield VA, 21 November 2019.

Mayer, L.A., Invited Dinner Talk, Mapping the Fjords of Northwestern Greenland to Understand the History of the Greenland Ice Sheet, Arctic 5 Conference, Colorado Springs CO, 3 December 2019.

Mayer, L.A., Invited Talk, Seabed2030 and IBCAO 4.0, Arctic 5 Conference, Colorado Springs, CO, 4 December 2019.

Mayer, L.A., Invited Talk, Water Column Mapping in the Arctic: Gas Seeps and Oceanography, Arctic 5 Conference, Colorado Springs, CO, 5 December 2019.

Jakobsson, M. and Mayer, L.A., (2019), Evolving Arctic Bathymetry: The International Bathymetric Chart of the Arctic Ocean (IBCAO) Version 4.0 Compiled Under the Auspices of the Nippon Foundation-GEBCO-Seabed 2030 Project, Abstract OS13C-115 presented at 2019 Fall Meeting, AGU, San Francisco CA, 9-13 Dec. 2019.

Sowers, D., Masetti, G., Mayer, L.A., Johnson, P.J, Gardner, J.V., and Armstrong, A., (2019), Adding Value to Broad-scale Ocean Exploration Mapping Data Through Standardized Geomorphic Classification and Backscatter Data Analysis. Abstract OS11A-03 presented at 2019 Fall Meeting, AGU, San Francisco CA, 9-13 Dec. 2019.

Weber, Thomas & Mayer, Larry & Lyons, Anthony & Loranger, Scott & Padilla, Alexandra & Weidner, Elizabeth. (2019). Echoes from the ocean's interior: High-frequency observations of ocean phenomena. *The Journal of the Acoustical Society of America*. 145. 1653-1653. 10.1121/1.5101062.

### **Invited Talks and Published Abstracts (2020)**

Mayer, L.A., Invited Talk, The Nippon Foundation/GEBCO Seabed 2030 Project, Atlantic Seafloor Mapping International Working Group, Brussels Belgium, 4 February 2020.

Mayer, L.A., Invited Talk, Oceans, Global Warming and Law of the Sea, Directorate General MARE, European Commission, Brussels Belgium, 5 February 2020.

Mayer, L.A., Invited Talk, Understanding UNCLOS Article 76 and its Application in the Arctic, Legal Services Directorate, European Commission, Brussels Belgium, 6 February 2020.

Mayer, L.A., Invited Lecture, Understanding UNCLOS Article 76 and its Application in the Arctic, Harvard Law School, 27 February 2020.

Mayer, L.A., Invited Lecture, Understanding UNCLOS Article 76 and its Application in the Arctic, Yale Law School, 3 March 2020.

Mayer, L.A., Invited Panel Member, White House Summit on Partnerships in Ocean Science and Technology: Ocean Exploration Session, Consortium of Ocean Leadership Public Policy Forum, Washington DC, 12 March 2020.



Mayer, L.A. Update on Autonomous Vehicle Research and Development Program at the NOAA – UNH Joint Hydrographic Center/Center for Coastal and Ocean Mapping. Invited Talk, Hydrographic Services Review Panel, 28 April 2020.

Mayer, L.A., Invited Talk: Characterizing the Ocean, Invited Talk, Global Oceans 2020, 7 October 2020.

Mayer, L.A., Invited Talk: The U.S. National Committee for the Decade of Ocean Science, National Academy of Sciences Webinar, 16 October 2020.

Mayer, L.A., Invited Lecture: The Walter Munk Annual Lecture Celebrating the Founding Director of IGPP, Ocean Mapping: The Quest to Make the Ocean Transparent, 19 October 2020.

Mayer, L.A., Keynote Talk: Ocean Mapping: Establishing the Geospatial Context for The REST of the Planet, GEOGRAPHY 2050 – Annual Meeting, 18 November 2020.

Mayer, L.A. Invited Talk: The U.S. National Committee on the Ocean Decade and Is a Truly International Arctic Research Program Possible? Norwegian Research Council and the IOC-UNESCO Symposium on Arctic Research in Support of the UN Decade of Ocean Science, 29 November 2020.

Mayer, L.A., Invited Talk: The Role of National Committees in the U.N. Decade for Ocean Science in Support of Sustainable Development, Youth Summit for the UN Ocean Decade, 5 December 2020.

Mayer, L.A., Keynote Lecture: The Munk Award Lecture, Can We Map the Entire Global Ocean Seafloor by 2030, 9 December 2020.

Mayer, L.A., Invited Talk: The U.S. National Committee on the Decade of Ocean Science, American Geophysical Union Town Hall Meeting on the Decade of Ocean Science, 9 December 2020.

### **Invited Talks and Published Abstracts (2021)**

Mayer, L.A. Invited Talk: Ocean Science and Technology: International Cooperation and Competition in the Blue Economy and National Security, at National Security: Significance of a Changing Climate: Risk and Resilience in the 21<sup>st</sup> Century, United States Naval War College, 8 January 2021.

Mayer, L.A., Invited Talk: Autonomous Systems and Ocean Mapping, GEBCO Symposium, 12 January 2021.

Mayer, L.A., Invited Moderator, The Decade of Ocean Science in Support of Sustainable Development, AIR Center, 15 January 2021.

Mayer, L.A., Chairperson – The U.S. National Committee for the Decade of Ocean Science in Support of Sustainable Development – Kick-Off Meeting, 3–4 February 2021.

Mayer, L.A., Invited Talk – Law of the Sea and Scientific Research – Lisbon Club, 22 February 2021.

Mayer, L.A., Invited Talk, Update on Saildrone and other USV Activities at CCOM, Hydrographic Services Review Panel, 3 March 2021.

Mayer, L.A., Invited Talk – The U.S. National Committee on The Decade of Ocean Science for Sustainable Development, First Meeting of Decade National Committees, 1 April, 2021.

Mayer, L.A., Invited Talk – The U.S. National Committee on the Decade of Ocean Science for Sustainable Development, Launch Meeting for Decade of Ocean Science Activities in Colombia, 9 April 2021.

Mayer, L.A., Invited Talk – From Deepwater Horizon to the Arctic Ocean: Exploring the Secrets of the Deep, Castilleja School, 12 April 2021.

Mayer, L.A., Invited Talk – The Quest to Completely Map the World’s Seafloor by 2030, Univ of Southern Florida Center for Ocean Mapping and Innovative Technologies Inaugural Seminar, 26 May 2021.

Mayer, L.A., Invited Talk, Seafloor Mapping: Where we are and where we are going, Global Maritime Forum 2021, National Maritime Intelligence Integration Office, Applied Research Lab, Univ of Hawaii, 21 September 2021.

Mayer, L.A., Invited webinar, Transiting the Northwest Passage, NERACOOS Webinar, 6 October 2021.

Mayer, L.A., Keynote Talk, Seabed 2030, ABLOS Annual Meeting, Monaco, 7 October 2021.

Mayer, L.A., Invited Talk, The Ocean Exploration Cooperative Institute: Mapping and Exploring the Ocean with the Next Generation of Uncrewed Surface Vessels, OECI Webinar, 20 October 2021.

Mayer, L.A., Invited Lecture, Sailing through the Northwest Passage: How Scientific Research and International Diplomacy Made that Possible, Harvard Kennedy School, 26 October 2021.

Mayer, L.A., Featured Speaker, The U.S. National Committee on the Decade of Ocean Science, UNOLS Annual Meeting, 1 November 2021.

Mayer, L.A., Invited Talk, Arctic Mapping Perspectives, International Cooperative Engagement Program for Polar Research SAWG-NSWG, 8 November 2021.

Mayer, L.A., Invited Presentation, U.S. National Committee on the Decade of Ocean Science, American Geophysical Union, New Orleans, 7 December 2021.

### **Invited Talks and Published Abstracts (2022)**

Mayer, L.A., Keynote Presentation, Using Bathymetry to Understand the Melting of the Greenland Icesheet, GeoTalks 2022, 26 January 2022.

Mayer, L.A., Invited Presentation, Experiences from Petermann and Ryder Glacier Expeditions – Swedish Polar Research Secretariat GEOGEO Meeting, 8 February 2022.

Mayer, L.A., Invited Presentation, Update on U.S. Decade on Ocean Science, Ocean Sciences Meeting, 8 February, 2022.

Mayer, L.A., Invited Talk, From the President's Panel on Ocean Exploration to NOMECA - Can We Really Map and Characterize the US EEZ?, Ocean Sciences Meeting, 28 February, 2022.

Mayer, L.A., Munk Medal Award Lecture “Can We Map the Entire World Ocean by 2030?” Ocean Sciences Meeting, 2 March 2022.

Mayer, L.A., Invited Presentation, Frontier Mapping – HEALY Northwest Passage Expedition, Seabed2030 Arctic/Antarctic/North Pacific Regional Center Meeting. Stockholm Sweden, 22 March 2022.

Mayer, L.A., Invited Lecture – UNCLOS Article 76 and the Arctic – Tufts University – Fletcher School, 6 April 2022.

Mayer, L.A., Invited Lectures – UNCLOS Article 76, The Arctic and Law of the Sea, Climate and Law of the Sea, Marine Scientific Research in the Arctic, Harvard University Law School, 7 April 2022.

Mayer, L.A., Invited Panelist, Diplomacy Forum on Statecraft in the Evolving Frontiers: Ocean, Arctic and Space, Meridian International Center, Washington, DC, 12 April 2022.

Mayer, L.A., Invited Lecture, UNCLOS Article 76 and the Arctic, Yale University Law School, 19 April 2022.

Mayer, L.A., Invited talk: Ocean Exploration from Deep Water Horizon to the Arctic, Riverwoods, Durham, NH, 20 April 2022.

Mayer, L.A., Invited Presentation, Cross-Cutting Themes for the U.S. Contributions to the Decade to UN Ocean Decade, Presentation to the Subcommittee on Oceans Science and Technology (OSTP), 22 April 2022.

Mayer, L.A., Invited Presentation, Cross-Cutting Themes for the U.S. Contributions to the Decade to UN Ocean Decade, Presentation to the National Science Foundation, 25 April 2022.

Mayer, L.A., Invited Presentation, Cross-Cutting Themes for the U.S. Contributions to the Decade to UN Ocean Decade, Presentation to the Bermuda to Bear Island (B2B) Consortium, 27 April 2022.

Mayer, L.A., WONDROS Podcast - <https://www.youtube.com/watch?v=Djj2uboEyV4>

Mayer, L.A., Hawaii Public Radio - <https://www.hawaiipublicradio.org/local-news/2022-05-26/ev-nautilus-expedition-test-3-remotely-operated-vehicles>

Mayer, L.A., Keynote Speaker, “We’ve Come a Long Way – Where Are We Going?” Opening Keynote, Canadian Hydrographic Conference, Ottawa CA, 7 June 2022.

Mayer, L.A., Panel Member, Expanding Ocean Understanding, Capitol Hill Ocean Week, Washington DC, 8 June 2022.

Mayer, L.A., Invited Presentation, Cross-Cutting Themes for the U.S. Contributions to the Decade to UN Ocean Decade, Presentation the Subcommittee on Ocean Science and Technology and associated federal agencies, 16 June 2022.

Mayer, L.A., Invited Presentation, Cross-Cutting Themes for the U.S. Contributions to the Decade to UN Ocean Decade, Public Presentation, National Academies of Science, Engineering and Medicine, Consortium, 22 June 2022.

Mayer, L.A., Invited Presentation, Deep-water DriX, Ocean Exploration Cooperative Institute Colloquium, 20 July 2022.

Mayer, L.A., Invited Talk, Autonomous Surface Vessel Activities at the Center for Coastal and Ocean Mapping, Office of Naval Research, Arlington VA, 8 September 2022.

Mayer, L.A., and Armstrong, A., Invited Talk, Update of Activities of the Joint Hydrographic Center, Hydrographic Services Review Panel, Honolulu, HI, 21 September 2022.

Mayer, L.A., Invited Lecture: From Deepwater Horizon to the Arctic: Exploring the Secrets of the Deep, Dineen Lecture, University of New Brunswick, Fredericton, NB, Canada, 16 November 2022.

Mayer, L.A., Invited Presentation: Expanding Scientific Operations in the Arctic: Technical Challenges, DARPA FORWARD, San Diego, CA, 13 December 2022.

Mayer, L.A., Invited Presentation, UNH-CCOM Uncrewed Vehicle Activities, Presentation to President of IFREMER, 16 December 2022.

Mayer, L.A., Invited talk, Expanding Scientific Operations in the Arctic: Technical Challenges, DARPA Forward, San Diego CA, 13 December 2022.

Mayer, L.A., Invited Talk, The Challenges of Mapping the Seafloor, American Geophysical Union College of Fellows Legacy Lecture, AGU Fall Meeting, U56A, Chicago, IL, 16 December 2022.

Mayer, L.A., Invited Talk, Multivehicle Collaboration using DriX, IFREMER, Brest France (virtual), 16 December 2022.

### **Invited Talks and Published Abstracts (2023)**

Mayer, L., Invited Talk, Uncrewed Surface Vessels in Support of Ocean Exploration, Exploring New Marine Frontiers: Maritime Users Conference, National Museum of Scotland, Edinburgh, Scotland, 25 January 2023.

Mayer, L., Invited Talk, Ocean Exploration Cooperative Institute (OECI) Multi-vehicle Operations: A UNH Perspective, NOAA Science Seminars Series, Silver Spring MD, 26 January 2023.

Mayer, L., Invited Talk, Acoustic Mapping of Seafloor, Water Column and Glacial Fronts in Support of Antarctic Science, Antarctic Community Workshop, National Academies of Science, 10 February 2023.

Mayer, L.A. and Armstrong, A., Invited Talk, NOAA-UNH Joint Hydrographic Center/ Center of Coastal and Ocean Mapping, Hydrographic Services Review Panel, San Juan, Puerto Rico, 28 February 2023.

Mayer, L.A., Invited Lecture, UNCLOS Article 76 and the Arctic, Harvard University Law School, Cambridge, MA, 9 March 2023.

Mayer, L.A., Invited Lecture, UNCLOS Article 76 and the Arctic, Yale University Law School, New Haven CN, 14 March 2023.

Mayer, L.A., Invited Lecture, UNCLOS Article 76 and the Arctic, Fletcher Law School, Boston, MA, 7 April 2023.

Mayer, L.A., Invited Lecture, North Greenland Earth-Ocean-Ecosystem Observatory – GEOEO, Arctic IV meeting Stavanger Norway, 26 April 2023.

Mayer, L.A., Invited Talk, Keynote speaker at School of Marine Science and Ocean Engineering Graduate Symposium, Durham, N.H. 4 May 2023.

Mayer, L.A., Invited Talk, Cross-Cutting Themes for U.S. Contributions to the U.N. Decade of Ocean Science for Sustainable Development, National Academy of Sciences Oceans Studies Board, 100<sup>th</sup> Meeting Celebration, 19 May 2023.

Mayer, L.A., Invited Address, Distinguished Alumni Keynote Speaker for the Scripps Graduate Commencement, La Jolla, CA, 16 June 2023.

Mayer, L.A., Invited Keynote, Nippon Foundation GEBCO Alumni Conference, Tokyo Japan, 1 August 2023.

Mayer, L.A., Invited Talk, Use of Small Uncrewed Vessel for Multi-Vehicle Collaborative Ocean Exploration and Deep-Water Mapping, FEMME, Edinburgh, Scotland, 26 September 2023.

Mayer, L.A., Invited Keynote, The Future of Ocean Exploration: Happening Now, Advisory Board Law of the Sea (ABLOS) Conference, Monaco, 11 October 2023.

Mayer, L.A., Invited Keynote, The Future of Ocean Mapping: Technical Advances and Challenges, Organization of Economic Cooperation and Development (OECD) Meeting, Monaco, 13 November, 2023.

Mayer, L.A. and Fehy, J., Invited Presentation, NA155: Multivehicle Exploration, 15 November, 2023.

Hoy, S., Baechler, N., Heffron, E., Gee, L., Peters, C., Elmore1, A., Mayer, L., Mueller M., and Peliks, M., Multibeam Surveying with an Uncrewed Wind-driven Platform: Results from Sairdroner's Mission to Alaska and the West Coast, Contributed Talk OS23B-04, American Geophysical Union Annual Meeting, San Francisco, 12 December, 2023.

Immani, A., Soule, A., Mayer, L.A., Smith, D., Elmore, A., Baechler, N, and Heffron, E., Plume Hunting in the Aleutians via a Sairdroner Surveyor USV, Contributed Talk, OS21C-1428, American Geophysical Union Annual Meeting, San Francisco, 12 December, 2023.

## Sea Experience

COCOTOW Leg 2	Acapulco - Panama	08-9-74	Watch stander piston coring
COCOTOW Leg 3	Panama - Panama	09-10-74	Deep-tow navigator, piston coring
NATOW Leg 2	Azores - Iceland	07-0875	Deep-tow navigator, deep-tow nephelometry, in situ filtration
NATOW Leg 3	Iceland - Scotland	08-09-75	Deep-tow, watch leader
PLEIADES Leg 3	Panama - Hawaii	07-08-76	Asst. Chief Scientist
PLEIADES Leg 4	Hawaii - San Diego	08-09-76	Deep-tow watch leader, computer data analyses
INDOMED Leg 2	Panama - Cadiz, Spain	11-12-77	Box coring, piston coring
INDOMED Leg 11	Cadiz, Spain - Bermuda	08-09-78	Deep-tow watch leader, coring
DSDP LEG 68	Curacao - Quayaquil	08-09-79	Physical Property Specialist
KNORR Leg 78	WHOI - WHOI	04-05-80	Instrument retrieval
RAMA Leg 3	Midway - Yokosuka	06-80	Seismics, suspended sediments
KNORR Leg 83	WHOI - WHOI	09-80	Mooring launch
NR-1	Port Canaveral - New London	03-81	Scientific observer
ENDEAVOR Leg 7	WHOI - Narragansett	05-81	HEBBLE
SCHOCK	Provincetown	10-81	Chirp Sonar sea trials
DSDP Leg 85	San Pedro - Hawaii	03-05-82	Co-chief scientist paleoceanography
HUDSON 83-017	Halifax - St. John's	06-83	Sea Marc I, Chirp Sonar
ENDEAVOR 104	Narragansett	08-83	Co-chief Scientist, seismic inter-calibration experiment
HUDSON 84-040	St. John's - Halifax	10-84	Sea Marc I, Chirp Sonar
CSS ENDEAVOR	Sidney - Sidney, BC	04-85	Seismic Intercalibration

HUDSON 85-010	Halifax - Azores	05-85	Chief Scientist, Sea MARC ODP Site surveys
PANDORA 85-059	Argentia - Halifax	07-85	Submersible dives Laurentian Fan
GEOTROPEX 85	Dakar - Rio de Janiero	09-85	Sidescan, ODP Site Survey Seismic
AII 116	WHOI-WHOI	08-86	Alvin Dives Laurentian Fan
HUDSON 86-034	St. John's - Halifax	10-86	Coring/seismic/velocimeter
HUDSON 87-003	Halifax - Halifax	0487	co-chief scientist long cores, dredging box cores, seismic, velocimeter
R/V HENLOPEN	WHOI - Delaware	09-87	Chirp sonar, High resolution seismics
BALDER CHALL.	Halifax - Halifax	09-87	Borehole drilling velocimeter, seismics
HMCS QUEST	Bermuda - Halifax	03-88	ROV operations
R/V ATLANTIC TWIN	NY - NY	06-88	Chirp Sonar
R/V THOMAS WASHINGTON	Majuro-Majuro	12-88	Seismics, ODP site surveys
R/V THOMAS WASHINGTON	San Diego- Manzanillo	11-89	Seismics, ODP site surveys
JOIDES RESOLUTION Leg 130	Guam - Guam	01-04-90	ODP Drilling  Ontong Java Plateau
R/V LAURENTIAN	Sault St. Marie	06-90	High-res seismic, paleoclimate
JOIDES RESOLUTION Leg 138	Panama - San Diego	05-07-91	Co-chief Scientist
R/V LAURENTIAN	Lake Huron	09-91	High-res seismic sidescan, coring
R/V FARNELLA	West Coast	05-92	High-res seismic
FCG SMITH	Bay of Fundy	07-92	Hydrographic ground truth
FG CREED	Bay of Fundy	08-92	Hydrographic ground truth

FG CREED	Lake Ontario	06-93	Neotectonic studies
R/V MIRAMACHI	Saint John Harbor	08-93	Hydrographic Ground Truth Surveyor
FG CREED	Saint John Harbor	09-93	Hydrographic ground truth
FG CREED	Stellwagen Bank	10-93	Multibeam survey
MARY-O	Saint John Harbor	09-93	Hydrographic ground truth
FG CREED	Saint John Harbor	05-94	Hydrographic ground truth
FG CREED	Bay of Fundy	06-94	Fundy Dune Survey
MARION DUFRESNE II	Eastern North Atlantic	05-95	IMAGES, Long cores
R/V PACIFIC	California Margin	07/08-95	ONR Strataform Multibeam
HUNTER	Monterey Bay	08-95	USGS Multibeam
FG CREED	NJ Margin	05-06-96	ONR Strataform Multibeam
R/V COASTAL SURVEYOR	Santa Monica	09-96	Multibeam Mapping USGS
TELEOS	Yarmouth N.S.	09-97	Hydroacoustics and Fisheries Geomatics
R/V OCEAN ALERT	San Diego, CA	03-98	Multibeam Mapping USGS
R/V THOMAS THOMPSON	Juan de Fuca Ridge	07-99	ROPOS ROV dives Marine Protected Area Mapping
R/V INLAND SURVEYOR	Lake Tahoe	8/9 -99	Multibeam Mapping
R/V SURF SURVEYOR	Crater Lake	7/8-00	Multibeam Mapping
NOAA Ship WHITING	Portsmouth Harbor	11-00	Multibeam Mapping
R/V COASTAL SURVEYOR	Portsmouth Harbor	06-01	Multibeam Mapping
R/V THOMAS THOMPSON	Nootka Fracture Zone	07-01	Multibeam Mapping
R/V CAPE HENLOPEN	NJ Margin	08-01	ONR Geoclutter in-situ acoustic measurements



R/V MOANA WAVE	NE Gulf of Mexico	09-01	Multibeam mapping
R/V MOANA WAVE	NW Gulf of Mexico	07-02	Multibeam mapping
OCEAN EXPLORER	Martha's Vineyard	07-02	Multibeam mapping ONR Mine Burial CS
GENESIS USNHC	Normandy	07-08-02	Wreck mapping Archeology CS
Various	Toledo Bend TX	03-03	Space Shuttle Columbia Search
R/V BALDUR	Husavik, Iceland	08-03	Multibeam Mapping
USCG HEALY	Barrow - Barrow, AK	08-09-03	Multibeam Mapping LoS Arctic CS
Loughrea Scanner	WHOI-WHOI	09-10-03	Multibeam Mapping ONR-Mine Burial
R/V EWING	Newport, OR - Kodiak, AK	08-09-04	Multibeam mapping, seismic and coring Alaskan Fjords, NSF OPDP Site Surveys
USCG HEALY	Nome AK - Barrow AK	10-04	Multibeam Mapping - LoS-Arctic - CS
M/V THE PERFORMER	Phuket-Phuket, Thailand	05-06-05	ROV operations at tsunami site
R/V KILO MOANA	Kodiak - Honolulu	08-9-05	LoS Mapping – Gulf of Alaska
USCG HEALY	Barrow - Barrow	08-09-07	LoS Mapping Arctic CS
USCG HEALY	Barrow - Barrow	08-09-08	LoS Mapping, Dredging CS
R/V TIOGA	WHOI - WHOI	07-09	AUV work ONR
USCG HEALY	Barrow - Barrow	08-09-09	LoS Mapping, Seismic Dredge
E/V NAUTILUS	Santorini - Haifa	08-09-10	Exploration, ROV, video CS
USCG HEALY	Barrow - Dutch Harbor	08-09-11	LOS Mapping, Arctic CS
E/V NAUTILUS	Paphos - Paphos, Cyprus	08-12	Exploration ROV video CS
USCG HEALY	Barrow - Dutch Harbor	08-09-12	LoS Mapping, Arctic CS
OCEAN EXPLORER OF SWEDEN	Upernavik - Greenland	08-13	Exploration, Mapping
E/V NAUTILUS	Ft. Lauderdale - Gulfport	06-14	Exploration/ROV

ICEBREAKER ODEN	Barrow - Tromso	08-10-14	SWERUS-C3 Mapping seafloor and gas seeps
E/V NAUTILUS	Galapagos	06-15	Return to the vents
ICEBREAKER ODEN	Northern Greenland	08-09-15	Mapping Petermann Fjord
USCG HEALY	Nome – Dutch Harbor	09-10-16	LoS Mapping Arctic CS
R/V SALLY RIDE	San Diego – San Diego	01-17	MBES SCORE Array
R/V SHEARWATER	Santa Barbara	06-17	ASV Mapping
E/V NAUTILUS	Channel Islands	07-17	ASV Mapping
E/V NAUTILUS	Channel Islands	08-18	ASV Mapping
E/V NAUTILUS	Victoria-Hawaii	11-18	Mapping/Kilauea
OKEANOS EXPLORER	Nassau-Bahamas	12-18	MBES Calibration AUTECH
R/V HOGARTH	Tampa-Tampa	2-19	ONR
E/V NAUTILUS	San Pedro-San Pedro	5-19	3-D Sonar Channel Islands
ICEBREAKER ODEN	Thule – Thule	8-9 19	Ryder Glacier Mapping
USCG HEALY	Seward,AK-Nuuk GND	8-9 21	Northwest Passage Transit
E/V NAUTILUS	Honolulu-Honolulu	03-22	DriX Shakedown Cruise
E/V NAUTILUS	Honolulu-Honolulu	05-22	DriX Technology Challenge