Curriculum Vitae

Dale T. Andersen

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Current Position: Senior Research Scientist, Carl Sagan Center, SETI Institute.
339 Bernardo Ave., Suite 200, Mountain View, CA 94043.

Academic Degrees:
Ph.D., McGill University, Physical Geography, 2004. B.S.,
Va Tech, Biology, 1979.

Appointments:
1993-Present *Senior Scientist, Carl Sagan Center, SETI Institute* 1987-1993
Principal Scientist, Lockheed Engineering and Sciences, Co. 1983-1986
Technical Director, Environmental Technologies, Inc.

Professional Background: 1993-present, SETI Institute. Planetary Scientist, Astrobiologist and experienced limnologist/aquatic ecologist with a long history of work in polar-regions and temperate deserts. Primary scientific interests are with locating, characterizing and understanding environments where physical and chemical conditions approach or exceed the tolerances for life. This includes biogeochemical processes occurring in polar lakes, oceans, and springs, or in lithic environments such as sandstones or retrogressive thaw slumps harboring massive ground ice. Of particular interest are the physical controls and ecological impacts that perennial ice-covers and thick continuous permafrost have on the structure and function of microbial ecosystems.

Developed techniques for scientific diving and the use of ROV technology for the exploration of perennially ice-covered lakes in Antarctica; led the first comprehensive studies of perennial spring ecosystems of Axel Heiberg in the High Arctic; led the first expedition to explore the sub-ice environment of Lakes Untersee and Obersee in the mountains of Queen Maud Land, Antarctica discovering the only know modern large conical stromatolites forming on the bottom of Lake Untersee. Extensive experience with EPO having created two PBS documentaries including the only live interactive broadcast from beneath Antarctic sea-ice with participation of middle schools in the US including among the earliest online blogs via a very young internet (Oct-Dec 1993); Polar research related images & video used by National Geographic, PBS, Discovery Channel, NASA, Nikon, and others for various magazines, journals and television programming, as well as non-fiction books. Contributed essay titled: Life Under the Arctic Ice." National Geographic Ocean: An Illustrated Atlas (2008); as a member of the NASA Exobiology Implementation Team within the US/USSR Joint Working Group for Space Medicine and Biology, led the US team during a joint US/Soviet expedition to the Bunger Hills, Antarctica to study perennially ice-covered lakes in that oasis region. 1987-1993, Lockheed Engineering & Sciences. Co., programmatic support of NASA Exobiology, CELSS,

Biospheric Program at NASA HQ, Washington, DC. Attended and completed the NASA Planetary Protection Course *Planetary Protection: Policies and Practices* (2006).

Recent Projects: Private foundation funded research (PI) (2011-2024) to study modern, large conical stromatolites in Lake Untersee, Antarctica; Exobiology funded research for laboratory investigations of samples returned from Lake Untersee, Antarctica (NASA Exobiology Award 80NSSC18K1094, PI); SETI Institute NASA Astrobiology Institute (Co-I); NASA Exobiology funded research to study microbialites in Lake Joyce Antarctica (PI, 2009-2010); ASTEP funded research (Co-I, 2009-2010) in University Valley Antarctica; Scientific diving support and research (Co-I) Pavilion Lake Research Group (1996-2015).

Professional Committees & Review Panels: Member of AGU; GSA; ASLO; AAUS; AAAS; Chair, US National Science Foundation Antarctic Scientific Diving Control Board (2011-2023), External reviewer or panel member for NASA PSTAR, LASER, Exobiology, MFRP; NSF DEB, DPP; NOAA; Norwegian Research Council. Board member, Antarctican Society

Relevant Field Work:

2017 Expedition to the Pilbara Region of Western Australia, Daintree Rainforest, Eastern Australia

28 Expeditions to Antarctica (MCM Dry Valleys, Bunger Hills, Schirmacher/Untersee Oases, Syowa Coast)

37 Expeditions to High Arctic (Axel Heiberg/Ellesemere Islands and Svalbard)

20+ Field Excursions to Pavilion Lake, in the mountains of British Columbia

2011 NASA Expedition to the Pilbara Region of Western Australia

1 Expedition to Eastern Siberia (Kolyma Region)

2 Expeditions to the Atacama Desert

Specialized Skills:

Expertise of polar & scientific diving techniques; use of SCUBA and remotely operated vehicles for scientific investigations of remote and extreme environments

Wilderness First Aid, CPR, emergency O_2 administration, anaphylaxis

Expertise in surface/underwater photography and videography

Expertise of general mountaineering techniques

NOAA surface-supplied dive training by the National Undersea Research Program

Scientific Diver Training Session, University of North Carolina - Wilmington (R/V Seahawk) 1984

Honors:

Explorers Club Finn Ronne Memorial Award 2025

Deans Honors List (Top 10%), McGill University Graduates 2004

United States Antarctic Service Medal

Fellow Member Explorers Club, FN87

NASA Group Achievement Award, Ames Mars Exploration Telepresence/Virtual Reality Team, 1995
NASA Certificate of Appreciation for Contributions to the US/Soviet Telemedicine Space Bridge 1990
Lockheed Engineering and Sciences Company, Tony Gross Award Nominee, 1991
Eagle Scout Award, Boy Scouts of America

Publications in Archival Literature:

1. Lacelle, D., M. Verret, B. Faucher, D. Fisher, A. Gaudreau, A. Pellerin, M. Ecclestone, and **D. T. Andersen** (2024), Permafrost and ground-ice conditions in the Untersee Oasis, Queen Maud Land, East Antarctica, Antarctic Science, 36(5), 361-378, doi:10.1017/S0954102024000233.

2. Greco, C, **Andersen, D. T**., Yallop, M. L., Barker, G., Jungblut, A. (2024) Genome-resolved metagenomics reveals diverse taxa and metabolic complexity in Antarctic lake microbial structures. Environmental Microbiology. 26(6), e16663, doi:https://doi.org/10.1111/1462-2920.16663.

3. Gaudreau, A., Lacelle, D. & **Andersen, D.T.** Synthetic aperture radar backscatter is influenced by bubbles at the ice/water interface of an Antarctic lake. Commun Earth Environ 5, 213 (2024). https://doi.org/10.1038/s43247-024-01370-2.

4. Lacelle, D., M. Christy, B. Faucher, P. Sobron, and **D. Andersen** (2024), Palaeo-environmental significance of evaporative calcite crusts in the Untersee Oasis, East Antarctica, Antarctic Science, 1-11, doi:10.1017/S0954102024000075.

5. Verret, M., D. Lacelle, W. Dickinson, D. Fisher & **D. T. Andersen**, 2024. Antarctic ground ice in a changing climate. Paper presented at the 12th International Conference on Permafrost Proceedings, Whitehorse, Yukon, Canada, 16-20 June 2024.

6. **Andersen, D. T.,** C. P. McKay, W. H. Pollard, and M. M. Marinova (2023), Water sources and composition of dissolved gases and bubbles in a saline high Arctic spring, PLOS ONE, 18(4), e0282877, doi:10.1371/journal.pone.0282877.

7. Brady, A.L., **Andersen, D.T**. & Slater, G.F. Biosignatures of in situ carbon cycling driven by physical isolation and sedimentary methanogenesis within the anoxic basin of perennially ice-covered Lake Untersee, Antarctica. Biogeochemistry 2023). https://doi.org/10.1007/s10533-023-01053-8

8. Wagner, N. Y., **D. T. Andersen**, A. S. Hahn, R. McLaughlin, S. S. Johnson, and A. SanchezFlores (2022), Draft Genome Sequence from a Putative New Genus and Species in the Family *M1A02* within the Phylum *Planctomycetes*, Isolated from Benthic Pinnacle Mats in Lake Untersee, Antarctica, *Microbiology Resource Announcements*, *11*(5), e01192-01121, doi:doi:10.1128/mra.01192-21.

9. Wagner, N. Y., **D. T. Andersen**, A. S. Hahn, and S. S. Johnson (2022), Survival strategies of an anoxic microbial ecosystem in Lake Untersee, a potential analog for Enceladus, *Scientific Reports*, *12*(1), 7376, doi:10.1038/s41598-022-10876-8

10. Faucher, B., D. Lacelle, N. B. Marsh, D. A. Fisher, and D. T. Andersen (2021), Ice-covered ponds in the Untersee Oasis (East Antarctica): Distribution, chemical composition, and trajectory under a warming climate, Arctic, Antarctic, and Alpine Research, 53(1), 324-339, doi:10.1080/15230430.2021.2000566.

11. Faucher, B., D. Lacelle, N. B. Marsh, L. Jasperse, I. D. Clark, and **D. T. Andersen** (2021), Glacial lake outburst floods enhance benthic microbial productivity in perennially ice-covered Lake Untersee (East Antarctica), *Communications Earth & Environment*, *2*(1), 211, doi:10.1038/s43247-021-00280-x.

12. Greco, C., **D. T. Andersen**, I. Hawes, A. M. Bowles, M. L. Yallop, G. Barker, and A. D. Jungblut (2020), Microbial diversity of pinnacle and conical microbial mats in the perennially ice-covered Lake Untersee, East Antarctica, *Frontiers in Microbiology*, doi:10.3389/fmicb.2020.607251.

13. Weisleitner, K., A. K. Perras, S. H. Unterberger, C. Moissl-Eichinger, **D. T. Andersen**, and B. Sattler (2020), Cryoconite Hole Location in East-Antarctic Untersee Oasis Shapes Physical and Biological Diversity, *Frontiers in Microbiology*, *11*, 1165.

14. Marsh, N. B., D. Lacelle, B. Faucher, S. Cotroneo, L. Jasperse, I. D. Clark, and **D. T. Andersen** (2020), Sources of solutes and carbon cycling in perennially ice-covered Lake Untersee, Antarctica, *Nature Scientific Reports*, *10*(1), 12290, doi:10.1038/s41598-020-69116-6.

15. Faucher, B., D. Lacelle, D. A. Fisher, K. Weisleitner, and **D. T. Andersen** (2020), Modeling δDδ18O Steady-State of Well-Sealed Perennially Ice-Covered Lakes and Their Recharge Source: Examples From Lake Untersee and Lake Vostok, Antarctica, *Frontiers in Earth Science*, *8*, 220, doi:10.3389/feart.2020.00220.

16. Weisleitner, K., A. Perras, C. Moissl-Eichinger, **D. T. Andersen**, and B. Sattler (2019), Source Environments of the Microbiome in Perennially Ice-Covered Lake Untersee, Antarctica, *Frontiers in Microbiology*, *10*, doi:10.3389/fmicb.2019.01019.

17. Faucher, B., D. Lacelle, D. A. Fisher, **D. T. Andersen**, and C. P. McKay (2019), Energy and water mass balance of Lake Untersee and its perennial ice cover, East Antarctica, *Antarctic Science*, *31*(05), 271-285, doi:10.1017/s0954102019000270.

18. Wagner, N. Y., A. S. Hahn, **D. Andersen**, M. B. Wilhelm, C. Morgan-Lang, M. Vanderwilt, and S. S. Johnson (2019), Draft Genome Sequence from a Putative New Genus and Species in the Family Methanoregulaceae Isolated from the Anoxic Basin of Lake Untersee in East Antarctica, Microbiol Resour Announc, 8(18), doi:10.1128/MRA.00271-19.

19. Rivera-Hernandez, F., D. Y. Sumner, T. J. Mackey, I. Hawes, and **D. T. Andersen** (2019), In a PICL: The sedimentary deposits and facies of perennially ice-covered lakes, *Sedimentology*, *66*(3), 917-939, doi:10.1111/sed.12522.

20. Koo, H., J. A. Hakim, C. D. Morrow, **D. T. Andersen**, and A. K. Bej (2018), Chapter 9 - Microbial Community Composition and Predicted Functional Attributes of Antarctic Lithobionts Using Targeted Next-Generation Sequencing and Bioinformatics Tools, in *Methods in Microbiology*, edited by V. Gurtler and J. T. Trevors, pp. 243-290, Academic Press, doi:https://doi.org/10.1016/bs.mim.2018.06.002.

21. Koo, H., J. Hakim, C. Morrow, M. Crowley, **D. Andersen**, and A. Bej (2018), Metagenomic Analysis of Microbial Community Compositions and Cold-Responsive Stress Genes in Selected Antarctic Lacustrine and Soil Ecosystems, *Life*, 8(3), 29, doi:10.3390/life8030029.

22. Bevington, J., C. P. McKay, A. Davila, I. Hawes, Y. Tanabe, and **D. T. Andersen** (2018), The thermal structure of the anoxic trough in Lake Untersee, Antarctica, *Antarctic Science*, *30*(6), 333-344, doi:10.1017/S0954102018000354.

23. Mackey, T. J., D. Y. Sumner, I. Hawes, S. Z. Leidman, **D. T. Andersen**, and A. D. Jungblut (2018), Stromatolite records of environmental change in perennially ice-covered Lake Joyce, McMurdo Dry Valleys, Antarctica, *Biogeochemistry*, *137*(1), 73-92, doi:10.1007/s10533-0170402-1.

24. McKay, C. P., **D. Andersen**, and A. Davila (2017), Antarctic environments as models of planetary habitats: University Valley as a model for modern Mars and Lake Untersee as a model for Enceladus and ancient Mars, *The Polar Journal*, *7*(2), 303-318, doi:10.1080/2154896X.2017.1383705.

25. Koo, H., N. Mojib, J. A. Hakim, I. Hawes, Y. Tanabe, **D. T. Andersen**, and A. K. Bej (2017), Microbial Communities and Their Predicted Metabolic Functions in Growth Laminae of a Unique Large Conical Mat from Lake Untersee, East Antarctica, *Frontiers in Microbiology*, *8*(1347), doi:10.3389/fmicb.2017.01347.

26. Koo, H., J. A. Hakim, C. D. Morrow, P. G. Eipers, A. Davila, **D. T. Andersen**, and A. K. Bej (2017), Comparison of two bioinformatics tools used to characterize the microbial diversity and predictive functional attributes of microbial mats from Lake Obersee, Antarctica, *Journal of Microbiological Methods*, *140*, 15-22, doi:http://dx.doi.org/10.1016/j.mimet.2017.06.017.

27. Fomenkov, A., V. N. Akimov, L. V. Vasilyeva, D. T. Andersen, T. Vincze, and R. J. Roberts (2017), Complete Genome and Methylome Analysis of Psychrotrophic Bacterial Isolates from Lake Untersee in Antarctica, Genome Announc, 5(11), doi:10.1128/genomeA.01753-16.

28. **Andersen, D. T**., C. P. McKay, and V. Lagun. 2016. *Lake Untersee, Antarctica Climate Data, Version 1*. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center. doi: http://dx.doi.org/10.5067/01U4L6KSRLFU.

29. Filippova, S. N., N. A. Surgucheva, V. V. Sorokin, V. N. Akimov, E. A. Karnysheva, A. V. Brushkov, **D. Andersen**, and V. F. Gal'chenko (2016), Bacteriophages in Arctic and Antarctic Low-Temperature Systems, *Microbiology*, *85*(3), 359-366, doi:10.1134/S0026261716030048.

30. Sumner, D. Y., A. D. Jungblut, I. Hawes, D. T. Andersen, T. J. Mackey, and K. Wall (2016), Growth of elaborate microbial pinnacles in Lake Vanda, Antarctica, Geobiology, 14(6), 556-574, doi:https://doi.org/10.1111/gbi.12188.

31. Koo, H., J. A. Hakim, P. R. E. Fisher, A. Grueneberg, **D. T. Andersen**, and A. K. Bej (2016), Distribution of cold adaptation proteins in microbial mats in Lake Joyce, Antarctica: Analysis of metagenomic data by using two bioinformatics tools, *Journal of Microbiological Methods*, *120*, 23-28, doi:http://dx.doi.org/10.1016/j.mimet.2015.11.008.

32. Koo, H., J. A. Hakim, P. R. E. Fisher, A. Grueneberg, **D. T. Andersen**, and A. K. Bej (2016), Distribution of cold adaptation proteins in microbial mats in Lake Joyce, Antarctica: Analysis of metagenomic data by using two bioinformatics tools, *Journal of Microbiological Methods*, *120*, 23-28, doi:http://dx.doi.org/10.1016/j.mimet.2015.11.008.

33. **Andersen, D. T.**, C. P. McKay, and V. Lagun (2015), Climate Conditions at Perennially IceCovered Lake Untersee, East Antarctica, *Journal of Applied Meteorology and Climatology*, *54*(7), 1393-1412, doi:10.1175/jamc-d-14-0251.1.

34. Mackey, T. J., D. Y. Sumner, I. Hawes, A. D. Jungblut, and **D. T. Andersen** (2015), Steel, H. C. B., C. P. McKay, and **D. T. Andersen** (2015), Modeling circulation and seasonal fluctuations in perennially ice-covered and ice-walled Lake Untersee, Antarctica, Limnology and Oceanography, doi:10.1002/lno.10086.

35. Mackey, T. J., D. Y. Sumner, I. Hawes, A. D. Jungblut, and **D. T. Andersen** (2015), Growth of modern branched columnar stromatolites in Lake Joyce, Antarctica, Geobiology, doi:10.1111/gbi.12138.

36. Zhang, L., A. D. Jungblut, I. Hawes, **D. T. Andersen**, D. Y. Sumner, and T. J. Mackey (2015), Cyanobacterial diversity in benthic mats of the McMurdo Dry Valley lakes, Antarctica, Polar Biology, 1-14, doi:10.1007/s00300-015-1669-0.

37. Koo, H., T. Ptacek, M. Crowley, A. K. Swain, J. D. Osborne, A. K. Bej, and **D. T. Andersen** (2014), Draft Genome Sequence of Hymenobacter sp. Strain IS2118, Isolated from a Freshwater Lake in Schirmacher Oasis, Antarctica, Reveals Diverse Genes for Adaptation to Cold Ecosystems, *Genome Announcements*, *2*(4), doi:10.1128/genomeA.00739-14.

38. Huang**,** J.P., Swain, A.K., **Andersen, D.T**., Bej, A.K. (2014). Bacterial diversity within five unexplored freshwater lakes interconnected by surface channels in East Antarctic Dronning Maud Land (Schirmacher Oasis) using amplicon pyrosequencing. Polar Biol DOI 10.1007/s00300-013-1436-z

39. Karanovic, T., Gibson, J.A.E., Hawes, I., **Andersen, D.T.**, and Stevens, M.I. (2013). An endemic cyclopoid copepod from Lake Joyce challenges our understanding of McMurdo Dry Valley biodiversity. Antarctic Science. Available on CJO2013. doi:10.1017/S0954102013000643.

40. Mojib, N., Farhoomand, A., **Andersen**, **D.**, and Bej, A. (2013). UV and cold tolerance of a pigment-producing Antarctic Janthinobacterium sp. Ant5-2. *Extremophiles* 17, 367-378.

41. Marinova, M.M., McKay, C.P., Pollard, W.H., Heldmann, J.L., Davila, A.F., **Andersen**, **D.T.**, Jackson, W.A., Lacelle, D., Paulsen, G., and Zacny, K. (2013). Distribution of depth to icecemented soils in the high-elevation Quartermain Mountains, McMurdo Dry Valleys, Antarctica. *Antarctic Science* FirstView, 1-8.

42. Huang, J., Swain, A., Thacker, R., Ravindra, R., **Andersen**, **D.**, and Bej, A. (2013). Bacterial diversity of the rock-water interface in an East Antarctic freshwater ecosystem, Lake Tawani(P)†. *Aquatic Biosystems* 9, 4. doi:10.1186/2046-9063-9-4.

43. Filippova, S., N. Surgucheva, E. Kulikov, V. Sorokin, V. Akimov, A. Bej, C. McKay, D. Andersen, and V. Galchenko (2013), Detection of phage infection in the bacterial population of Lake Untersee (Antarctica), *Microbiology*, *82*(3), 383-386.

44. Hawes, I., Sumner, D., **Andersen**, **D.**, Jungblut, A., and Mackey, T. (2013). Timescales of Growth Response of Microbial Mats to Environmental Change in an Ice-Covered Antarctic Lake. *Biology* 2, 151-176.

45. Christopher P. McKay, C.R.S., Brian J. Glass, Arwen I. Davé, Alfonso F. Davila, Jennifer L. Heldmann, Margarita M. Marinova, Alberto G. Fairen, Richard C. Quinn, Kris A. Zacny, Gale Paulsen, Peter H. Smith, Victor Parro, Dale T. **Andersen**, Michael H. Hecht, Denis Lacelle, and Wayne H. Pollar**D.** (2013). The Icebreaker Life Mission to Mars: A Search for Biomolecular Evidence for Life. *Astrobiology* 13, 334-353.

46. Heldmann, J.L., Marinova, M., Williams, K.E., Lacelle, **D.**, Mckay, C.P., Davila, A., Pollard, W., and **Andersen**, **D.T.** (2012). Formation and evolution of buried snowpack deposits in Pearse Valley, Antarctica, and implications for Mars. *Antarctic Science* 24, 299-316.

47. Huang, J., Mojib, N., Goli, R., Watkins, S., Waites, K., Ravindra, R., **Andersen**, **D.**, and Bej, A. (2012). Antimicrobial activity of PVP from an Antarctic bacterium, Janthinobacterium sp. Ant5-2, on multi-drug and methicillin resistant Staphylococcus aureus. *Nat Prod Bioprospect* 2, 104110.

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49. **Andersen**, **D.T.**, Sumner, D.Y., Hawes, I., Webster-Brown, J., and McKay, C.P. (2011). Discovery of large conical stromatolites in Lake Untersee, Antarctica. *Geobiology* 9, 280-293.

50. Hawes, I., Sumner, D.Y., **Andersen**, **D.T.**, and Mackey, T.J. (2011). Legacies of recent environmental change in the benthic communities of Lake Joyce, a perennially ice-covered Antarctic lake. *Geobiology* 9, 394-410.

51. Lacelle, D., Davila, A., Pollard, W., **Andersen**, **D.**, Heldmann, J., Marinova, M., and McKay, C. (2011). Stability of massive ground ice bodies in University Valley, McMurdo Dry Valleys of Antarctica: Using stable O-H isotope as tracers of sublimation in hyper-arid regions. *Earth and Planetary Science Letters* 301, 403-411.

52. Lim, D.S., Brady, A., Abercromby, A., **Andersen**, **D.**, **Andersen**, M., Arnold, R., Bird, J., Bohm, H., Booth, L., and Cady, S. (2011). A historical overview of the Pavilion Lake Research Project—Analog science and exploration in an underwater environment. *Geological Society of America Special Papers* 483, 85-115.

53. Mojib, N., **Andersen**, **D.T.**, and Bej, A.K. (2011). Structure and function of a cold shock domain fold protein, CspD in Janthinobacterium sp. Ant5-2 from East Antarctica. *FEMS Microbiology Letters*, 319: 106–114. doi: 10.1111/j.1574-6968.2011.02269.x

54. Mojib, N., Nasti, T.H., **Andersen**, **D.T.**, Attigada, V.R., Hoover, R.B., Yusuf, N., and Bej, A.K. (2011). The antiproliferative function of violacein-like purple violet pigment (PVP) from an Antarctic Janthinobacterium sp. Ant5-2 in UV-induced 2237 fibrosarcoma. *International Journal of Dermatology* 50, 1223-1233.

55. Brady, A., Slater, G., Omelon, C., Southam, G., Druschel, G., **Andersen**, D., Hawes, I., Laval, B., and Lim, D. (2010b). Photosynthetic isotope biosignatures in laminated micro-stromatolitic and non-laminated nodules associated with modern, freshwater microbialites in Pavilion Lake, BC. *Chemical Geology*.

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1. **Andersen, D.T.** (2024) Panel Member: Science on the Frontier: Contemporary Expeditions in the Extremes. 2024 Field Forward Symposium Panel Discussion and Luncheon,Tuesday, September 24, 2024. Field Museum, Chicago, Illinois.

2. **Andersen, D. T.** (2024), Lessons from Analog Research Missions. 7 August. Presentation to: A Science Strategy for the Human Exploration of Mars: Panel on Biological and Physical Sciences and Human Factors Open Meeting, Space Studies Board, National Academies of Science, Washington, DC.

3. Vimercati L., Greco C., **Andersen D**. Jungblut A. 14th International Congress on Extremophiles, September 2024 (Loutraki, Greece). Talk: Unique Antarctic stromatolies reveal taxonomic and metabolic complexity: implications for the early evolution of life.

4. Jungblut, A. D., C. Greco, **D.T. Andersen**, G. Barker, M. Yallop, Genome-resolved metagenomics reveals taxa and metabolic complexity in benthic microbial structures in the ice-covered Lake Untersee, Antarctica, ISME19, Cape Town, SA, 20 August 2024, 2024.

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12. Wagner, N., A. S. Hahn, **D. T. Andersen**, M. Vanderwilt, and S. Johnson (2020), Metagenomic Analysis of the Methane-rich Anoxic Basin of the Antarctic Lake Untersee as an Enceladus Analog, in *AGU Fall Meeting 2020*.

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14. M. Vanderwilt, N. Wagner, **D. T. Andersen**, S. S. Johnson (2019), **Soil microbial communities in an Antarctic water track: identifying potential ecological optimums in a hyperarid Mars-analog environment.** AbSciCon is the next in a series of conferences organized by the astrobiology community. AbSciCon will be held on 24-28 June 2019 in Bellevue, Washington.

15. Greg Slater, Allyson Brady, **Dale Andersen**, Lesley Warren, Corey Goad (2019), **Isotopic Depletion of Methanotroph Biomarker Lipids in Lacustrine Systems.** AbSciCon 2019 is the next in a series of conferences organized by the astrobiology community. AbSciCon will be held on 24-28 June 2019 in Bellevue, Washington.

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19. **Dale Andersen**: Invited Panelist at the **Breakthrough Initiatives, 2018 Breakthrough Discuss Conference. Panel One: Search for Life in our Solar System**. April 12-13, 2018, Stanford University, Palo Alto, CA.

20. Nicole Marsh, Denis Lacelle, Ian Clark, Benoit Faucher & **Dale T. Andersen** (2018) **Carbon-Cycling in Lake Untersee, Dronning Maud Land, East Antarctica** Poster 349 in Session 10e, Tuesday @ 17:15 - 19:15. Goldschmidt 2018, Boston, MA. 12-17 Aug. Goldschmidt is the foremost annual, international conference on geochemistry and related subjects, organized by the Geochemical Society and the European Association of Geochemistry.

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