
CURRICULUM VITA

T.C. Onstott

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(a) Professional Preparation

Calif. Inst. of Technology	Geophysics	B.S. 1976
Princeton University	Geology	M.A. 1978
Princeton University	Geology	Ph.D. 1980
Princeton University/Univ. of Toronto	⁴⁰ Ar/ ³⁹ Ar geochronology	1980-1983.

(b) Appointments

Full Professor, Princeton University, 2001-present.
Associate Professor, Princeton University, 1990-2001.
Assistant Professor, Princeton University, 1985-1990.
Research associate, Princeton University, 1983-1985.
Research Assistant at U.S.G.S. Flagstaff, Arizona, 1974-1976.

Other Professional Experiences:

U.S. representative to IGCP 108/144 "Correlation of West Africa and Eastern Brazil", 1980-1984.
Chairman, GSA Special Symposium on "Radiometric Calibration of thermal histories of rocks" GSA Nat. Mtg., 1985.
Chairman of U.S. working group for IGCP 204 "Precambrian Geology of the Amazonas Craton", 1987-1988.
Editor, Special Issue of Precamb. Res., 42, 1988.
Associate editor for Precambrian Research, 1988-1994.
Editor, Special Issue of Precamb. Res., "Precambrian Paleomagnetism, Paleogeography and Paleoclimates, 1994.
Co-Chairman of Deep Microbiology Working Group, Subsurface Science Program, U.S. Dept. of Energy, 1994-1996.
Co-Chairman of Special Session on Subsurface Microbial Processes, Fall Meeting of American Geophysical Union, 1996.
Member of Review Panel for Environmental Management Science Program, U.S. Dept. of Energy, 1996.
Program Committee Member for 1997 SPIE Conference for Investigation of Extraterrestrial Microorganisms.
Participant of NASA Workshop on Mars Drilling, NASA Ames, Dec. 1996
Participant of NASA Workshop on Mars Sample Return, NASA Ames, June 1997
Member of Athena Proposal Team in charge of Planetary Protection Issues, 06/97 to 04/98
Participant of NASA Workshop on Deep Drilling Mars Mission, Los Alamos, May, 1998.
Member of Review Panel for LExEn Program, NSF, May 2000.
Organized Workshop on Biogeochemical Processes at Lead, South Dakota as part of Underground Laboratory Conference, Jan. 2000.
Drafted Earth Lab report to NSF, 2004.
S1 Principal Investigator for Deep Underground Science and Engineering Laboratory, (DUSEL) 2004-2007.
Member of the DUSEL Experiment Development and Coordination committee 2007-2009.

Presenter at NASA Workshop on Deep Drilling Mars Mission, NASA Ames, Feb., 2008.
Co-Director of Indiana-Princeton-Tennessee Astrobiology Institute, 2004-2008.
Co-Chairman of Special Session on Underground Laboratories, Fall Meeting of American Geophysical Union, 2008.
Co-Chairman of Special Session on Rocks, Fractures, Fluids, and Life: Insights From Underground Research Laboratories, Fall Meeting of American Geophysical Union, 2010.
NSF DEB Review Panel Member, 2012
U.S. DOE Early Career Proposals Review Panel Member, 2013.
NASA - Member of the Mars 2020 Science and Definition Team, Spring/Summer 2013.
NASA – Member of the Advisory Committee on Planetary Protection – 2014-2016 – committee was dissolved by the new administration.
NSF – Origins of Life Sandbox Meeting preproposal review panel – 2016.
ICDP – Member of the Scientific Advisory Group, nominated by NSF – 2017-today.

Awards and Fellowships

Presidential Young Investigator Award, 1985-1989
Jubilee Medal, Geological Society of South Africa, 1988
Award for Meritorious Research in Subsurface Microbiology, U.S. Dept. of Energy, 1995
Award for Meritorious Research in NABIR Program, U.S. Dept. of Energy, 1998
Appreciation Award for Research Excellence, Office of Science, U.S. Dept. of Energy, 2002
TIME100 Most Influential People in the World, 2007

Refereed Journals and Reviews

* Undergraduate, graduate or postdoctoral advisees

1. 2021 *Harris, R.L., Schuergel, A.C., Wang, W., *Tamama, Y., *Garvin, Z.K., Onstott, T.C., Transcriptional response to prolonged perchlorate exposure in the methanogen *Methanosarcina barkeri* and implications for Martian habitability. (2021) *Scientific Reports*, 11 (1), art. no. 12336. doi: 10.1038/s41598-021-91882-0
2. 2021 *Liang, R., Li, Z., *Lau Vetter, M.C.Y., Vishnivetskaya, T.A., Zanina, O.G., Lloyd, K.G., Pfiffner, S.M., Rivkina, E.M., Wang, W., Wiggins, J., Miller, J., Hettich, R.L., Onstott, T.C., Genomic reconstruction of fossil and living microorganisms in ancient Siberian permafrost. (2021) *Microbiome*, 9 (1), art. no. 110 . doi: 10.1186/s40168-021-01057-2
3. 2021 Becraft, E.D., *Lau Vetter, M.C.Y., Bezuidt, O.K.I., Brown, J.M., Labonté, J.M., Kauneckaitė-Griguole, K., Salkauskaitė, R., Alzbutas, G., Sackett, J.D., Kruger, B.R., Kadnikov, V., van Heerden, E., Moser, D., Ravin, N., Onstott, T., Stepanauskas, R., Evolutionary stasis of a deep subsurface microbial lineage. (2021) *ISME Journal*, 15 (10), pp. 2830-2842. doi: 10.1038/s41396-021-00965-3
4. 2021 Wu, X., Chauhan, A., Layton, A.C., *Lau Vetter, M.C.Y., *Stackhouse, B.T., Williams, D.E., Whyte, L., Pfiffner, S.M., Onstott, T.C., Vishnivetskaya, T.A., Comparative Metagenomics of the Active Layer and Permafrost from Low-Carbon Soil in the Canadian High Arctic. (2021) *Environmental Science and Technology*, 55 (18), pp. 12683-12693. doi: 10.1021/acs.est.1c00802
5. 2021 Sipes, K., Almatari, A., Eddie, A., Williams, D., Spirina, E., Rivkina, E., Liang, R., Onstott, T.C., Vishnivetskaya, T.A., Lloyd, K.G. Eight Metagenome-Assembled Genomes Provide Evidence for Microbial Adaptation in 20,000-to 1,000,000-Year-Old Siberian Permafrost. (2021) *Applied and Environmental Microbiology*, 87 (19), pp. 1-17. doi: 10.1128/AEM.00972-21
6. 2021 *Liang, R., Robb, F.T., Onstott, T.C., Aspartic acid racemization and repair in the survival and recovery of hyperthermophiles after prolonged starvation at high temperature. (2021) *FEMS Microbiology Ecology*, 97 (9), art. no. fiab112, doi: 10.1093/femsec/fiab112
7. 2021 Tarnas, J.D., Mustard, J.F., Sherwood Lollar, B., Stamenković, V., Cannon, K.M., Lorand, J.-P., Onstott, T.C., Michalski, J.R., Warr, O., Palumbo, A.M., Plesa, A.-C., Earth-like Habitable Environments in the Subsurface of Mars (2021) *Astrobiology*, 21 (6), pp. 741-756. doi: 10.1089/ast.2020.2386
8. 2021 Nayfach, S., Roux, S., Seshadri, R., Udworthy, D., Onstott, T. C. et al. Publisher Correction: A genomic catalog of Earth's microbiomes (*Nature Biotechnology*, (2021), 39, 4, (499-509), 10.1038/s41587-020-0718-6) (2021) *Nature Biotechnology*, 39 (4), p. 520. doi: 10.1038/s41587-020-00769-4
9. 2021 Nayfach, S., Roux, S., Seshadri, R., Udworthy, D., Onstott, T. C. et al., IMG/M Data Consortium Author Correction: A genomic catalog of Earth's microbiomes (*Nature Biotechnology*, (2021), 39, 4, (499-509), 10.1038/s41587-020-0718-6) (2021) *Nature Biotechnology*, 39 (4), p. 521. doi: 10.1038/s41587-021-00898-4

10. 2021 Nayfach, S., Roux, S., Seshadri, R., Udwary, D., Onstott, T. C. et al. IMG/M Data Consortium, A genomic catalog of Earth's microbiomes. (2021) *Nature Biotechnology*, 39 (4), pp. 499-509. doi: 10.1038/s41587-020-0718-6
11. 2021 Purtschert, R., Yokochi, R., Jiang, W., Lu, Z.-T., Mueller, P., Zappala, J., Van Heerden, E., Cason, E., *Lau, M., Kieft, T.L., Gerber, C., Brennwald, M.S., Onstott, T.C., Underground production of ⁸¹Kr detected in subsurface fluids (2021) *Geochimica et Cosmochimica Acta*, 295, pp. 65-79. doi: 10.1016/j.gca.2020.11.024
12. 2021 Warr, O., Giunta, T., Onstott, T.C., Kieft, T.L., Harris, R.L., *Nisson, D.M., Lollar, B.S., The role of low-temperature ¹⁸O exchange in the isotopic evolution of deep subsurface fluids. (2021) *Chemical Geology*, 561, art. no. 120027. doi: 10.1016/j.chemgeo.2020.120027
13. 2021 *Harris, R.L., *Vetter, M.C.Y.L., van Heerden, E., Cason, E., Vermeulen, J.-G., Taneja, A., Kieft, T.L., DeCoste, C.J., Laevsky, G.S., Onstott, T.C., FISH-TAMB, a Fixation-Free mRNA Fluorescent Labeling Technique to Target Transcriptionally Active Members in Microbial Communities (2021) *Microbial Ecology*, doi: 10.1007/s00248-021-01809-5 (Article in Press)
14. 2020 Beam, J.P., Becraft, E.D., Brown, J.M., Schulz, F., Jarett, J.K., Bezuidt, O., Poulton, N.J., Clark, K., Dunfield, P.F., Ravin, N.V., Spear, J.R., Hedlund, B.P., Kormas, K.A., Sievert, S.M., Elshahed, M.S., Barton, H.A., Stott, M.B., Eisen, J.A., Moser, D.P., Onstott, T.C., Woyke, T., Stepanauskas, R., Ancestral Absence of Electron Transport Chains in Patescibacteria and DPANN (2020) *Frontiers in Microbiology*, 11, art. no. 1848, . doi: 10.3389/fmicb.2020.01848
15. 2020 Sun, E.W.-H., Hajirezaie, S., Dooner, M., Vishnivetskaya, T.A., Layton, A., Chauhan, A., Pfiffner, S.M., Whyte, L.G., Onstott, T.C., *Lau, M.C.Y., Thaumarchaea genome sequences from a high Arctic active layer. (2020) *Microbiology Resource Announcements*, 9 (21), art. no. e00326-20, doi: 10.1128/MRA.00326-20
16. 2020 *Oh, Y., Zhuang, Q., Liu, L., Welp, L.R., *Lau, M.C.Y., Onstott, T.C., Medvigy, D., Bruhwiler, L., Dlugokencky, E.J., Hugelius, G., D'Imperio, L., Elberling, B., Reduced net methane emissions due to microbial methane oxidation in a warmer Arctic. (2020) *Nature Climate Change*, 10 (4), pp. 317-321. doi: 10.1038/s41558-020-0734-z
17. 2020 *Liang, R., Lau, M.C.Y., Saitta, E.T., Garvin, Z.K., Onstott, T.C., Genome-centric resolution of novel microbial lineages in an excavated Centrosaurus dinosaur fossil bone from the Late Cretaceous of North America. (2020) *Environmental Microbiomes*, 15 (1), art. no. 8, . doi: 10.1186/s40793-020-00355-w
18. 2019 Weinstein, D.J., Allen, S.E., *Lau, M.C.Y., Erasmus, M., Asalone, K.C., Walters-Conte, K., Deikus, G., Sebra, R., Borgonie, G., van Heerden, E., Onstott, T.C., Bracht, J.R., The genome of a subterrestrial nematode reveals adaptations to heat (2019) *Nature Communications*, 10 (1), art. no. 5268, . doi: 10.1038/s41467-019-13245-8
19. 2019 Borgonie, G., *Magnabosco, C., García-Moyano, A., Linage-Alvarez, B., Ojo, A.O., Freese, L.B., Van Jaarsveld, C., Van Rooyen, C., Kuloyo, O., Cason, E.D., Vermeulen, J., Pienaar, C., Van Heerden, E., Sherwood Lollar, B., Onstott, T.C., Mundle, S.O.C., New ecosystems in the deep subsurface follow the flow of water driven by geological activity (2019) *Scientific Reports*, 9 (1), art. no. 3310, . doi: 10.1038/s41598-019-39699-w

20. 2019 *Rusley, C., Onstott, T.C., Vishnivetskaya, T.A., Layton, A., Chauhan, A., Pfiffner, S.M., Whyte, L.G., *Lau, M.C.Y., Metagenome-assembled genome of USC α AHI, a potential high-affinity methanotroph from Axel Heiberg Island, Canadian High Arctic (2019) *Microbiology Resource Announcements*, 8 (46), art. no. e01178-19, . doi: 10.1128/MRA.01178-19
21. 2019 Onstott, T.C., Ehlmann, B.L., Sapers, H., Coleman, M., Ivarsson, M., Marlow, J.J., Neubeck, A., Niles, P., Paleo-Rock-Hosted Life on Earth and the Search on Mars: A Review and Strategy for Exploration. (2019) *Astrobiology*, 19 (10), pp. 1230-1262. doi: 10.1089/ast.2018.1960
22. 2019 *Liang, R., *Lau, M.C.Y., Baars, O., Robb, F.T., Onstott, T.C., Aspartic acid racemization constrains long-term viability and longevity of endospores. (2019) *FEMS Microbiology Ecology*, 95 (10), art. no. fiz132, . doi: 10.1093/femsec/fiz132
23. 2019 Hamilton-Brehm, S.D., Stewart, L.E., Zavarin, M., Caldwell, M., Lawson, P.A., Onstott, T.C., Grzymiski, J., Neveux, I., Lollar, B.S., Russell, C.E., Moser, D.P., *Thermoanaerobacterium fracticalcis* gen. nov. sp. nov., a novel fumarate-fermenting microorganism from a deep fractured carbonate aquifer of the US great basin(2019) *Frontiers in Microbiology*, 10 (SEP), art. no. 2224. doi: 10.3389/fmicb.2019.02224
24. 2019 Saitta, E.T.,*Liang, R., *Lau, M.C.Y., Brown, C.M., Longrich, N.R., Kaye, T.G., Novak, B.J., Salzberg, S.L., Norell, M.A., Abbott, G.D., Dickinson, M.R., Vinther, J., Bull, I.D., Brooker, R.A., Martin, P., Donohoe, P., Knowles, T.D.J., Penkman, K.E.H., Onstott, T. C. , Cretaceous dinosaur bone contains recent organic material and provides an environment conducive to microbial communities. (2019) *eLife*, 8, art. no. e46205. doi: 10.7554/eLife.46205.001
25. 2019 Altshuler, I., Ronholm, J., Layton, A., Onstott, T.C., Greer, C.W., Whyte, L.G., Denitrifiers, nitrogen-fixing bacteria and N₂O soil gas flux in high Arctic ice-wedge polygon cryosols. (2019) *FEMS Microbiology Ecology*, 95 (5), art. no. fiz049, doi: 10.1093/femsec/fiz049
26. 2019 Stamenković, V., Beegle, L.W., Zacny, K., Arumugam, D.D., Baglioni, P., Barba, N., Baross, J., Bell, M.S., Bhartia, R., Blank, J.G., Boston, P.J., Breuer, D., Brinckerhoff, W., Burgin, M.S., Cooper, I., Cormarkovic, V., Davila, A., Davis, R.M., Edwards, C., Etiope, G., Fischer, W.W., Glavin, D.P., Grimm, R.E., Inagaki, F., Kirschvink, J.L., Kobayashi, A., Komarek, T., Malaska, M., Michalski, J., Ménez, B., Mischna, M., Moser, D., Mustard, J., Onstott, T.C., Orphan, V.J., Osburn, M.R., Plaut, J., Plesa, A.-C., Putzig, N., Rogers, K.L., Rothschild, L., Russell, M., Sapers, H., Lollar, B.S., Spohn, T., Tarnas, J.D., Tuite, M., Viola, D., Ward, L.M., Wilcox, B., Woolley, R., The next frontier for planetary and human exploration (2019) *Nature Astronomy*, 3 (2), pp. 116-120. doi: 10.1038/s41550-018-0676-9
27. 2019 *Liang, R., *Lau, M., Vishnivetskaya, T., Lloyd, K.G., Wang, W., Wiggins, J., Miller, J., Pfiffner, S., Rivkina, E.M., Onstott, T.C., Predominance of anaerobic, spore-forming bacteria in metabolically active microbial communities from ancient Siberian permafrost. (2019) *Applied and Environmental Microbiology*, 85 (15), art. no. e00560-19. doi: 10.1128/AEM.00560-19
28. 2018 Rachel L. Harris*, Maggie. C. Y. Lau*, Andreia Cadar, Douglas Bartlett, Errol Cason, Esta van Heerden, and Tullis C. Onstott, Draft Genome Sequence of *Candidatus Bathyarchaeota Archaeon BE326-BA-RLH*, an Uncultured Denitrifier and Putative

- Anaerobic Methanotroph from South Africa's Deep Continental Biosphere. *Microbiology Resource Announcements*, 7:e01295-18
29. 2018 Onstott, T.C., B.L. Ehlmann, H. Sapers, M. Coleman, M. Ivarsson, J.J. Marlow, A. Neubeck, and P. Niles, Paleo-Rock-Hosted Life on Earth and the Search on Mars: a Review and Strategy for Exploration, arXiv. <https://arxiv.org/abs/1809.08266>.
 30. 2018 Magnabosco, C.*, L-H Lin*, H. Dong*, M. Bomberg, W. Ghiorse, H. Stan-Lotter, K. Pedersen, T.L. Kieft, E. vanHeerden, and T.C. Onstott. The Biomass and Biodiversity of the Continental Subsurface. *Nature Geoscience*, 11:707–717, <https://doi.org/10.1038/s41561-018-0221-6>.
 31. 2018 Andrew W. Heard, Oliver Warr, Gaetan Borgonie, Borja Linage, Olukayode Kuloyo, Cara Magnabosco*, Maggie C.Y. Lau*, Mariana Erasmus, Errol D. Cason, Esta van Heerden, Thomas L.Kieft, Jennifer Mabry, Tullis C. Onstott, Barbara Sherwood Lollar, and Chris J. Ballentine, Origins and ages of fracture fluids in the South African Crust, *Chemical Geology*, 493, 379-395.
 32. 2018 Edwin S. Kite, Eric Gaidos, and Tullis C. Onstott, Valuing Life-Detection Missions. *Astrobiology* 18:834-840.
 33. 2018 Maggie C.Y. Lau*, Rachel L. Harris*, Youmi Oh*, Min Joo Yi*, Aida Behmard* and T.C. Onstott, Taxonomic and functional compositions impacted by the quality of metatranscriptomic assemblies. *Frontiers in Microbiology*, 9:1235, doi: 10.3389/fmicb.2018.01235.
 34. 2018 A. V. Shatilovich, A. V. Tchesunov, T. V. Neretina, I. P. Grabarnik, S. V. Gubin, T. A. Vishnivetskaya, T. C. Onstott, and E. M. Rivkina, Viable Nematodes from Late Pleistocene Permafrost of the Kolyma River Lowland. *Doklady Biological Sciences* 480:100–102.
 35. 2018 Kieft, T.L., Clifford C. Walters, Meytal B. Higgins, Anthony S. Mennito, Catherine F. M. Clewett, Verena Heuer, Michael J. Pullin, Sarah Hendrickson, Esta van Heerden, Barbara Sherwood Lollar, Maggie C.Y. Lau*, T.C. Onstott, Dissolved Organic Matter Compositions in 0.6–3.4 km Deep Fracture Waters, Kaapvaal Craton, South Africa. *Organic Geochemistry* 118:116–131, <https://doi.org/10.1016/j.orggeochem.2018.02.003>.
 36. 2018 Magnabosco, C.*, Timmers, P.H.A., Lau, M.C.Y.*, Borgonie, G., Linage-Alvarez, B., Kuloyo, O., Alleva, R.*, Kieft, T. L., Slater, G. S., van Heerden, E., Sherwood Lollar, B. and Onstott, T. C. Fluctuations in populations of subsurface methane oxidizers in coordination with changes in electron acceptor availability. *FEMS Microbiology Ecology* 94:fiy089, <https://doi.org/10.1093/femsec/fiy089>.
 37. 2017 Harris, R.*, Maggie C. Y. Lau*, Esta van Heerden, Errol Cason, Jan-G Vermeulen, Anjali Taneja, Thomas L. Kieft, Christina DeCoste, Gary Laevsky, and Tullis C. Onstott.. Labeling of prokaryotic mRNA in live cells using fluorescent in situ hybridization of transcript-annealing molecular beacons (FISH-TAMB). *bioRxiv* <https://doi.org/10.1101/178368>.
 38. 2017 Eric Daniel Becraft, Tanja Woyke, Jessica Jarett, Natalia Ivanova, Filipa GodoyVitorino, Nicole Poulton, Julia M. Brown, Joe Brown, Maggie Lau*, Tullis Onstott, Jonathan Eisen, Duane Moser, Ramunas Stepanauskas. Rokubacteria: genomic giants among the uncultured bacterial phyla. *Frontiers in Microbiology* 8:2264, doi: 10.3389/fmicb.2017.02264.
 39. 2017 Michalski, J.R., Onstott, T.C., Mojzsis, S.J., Mustard, J., Chan, Q., Niles, P.B., Johnson, S.S. Seeking Signs of Chemosynthetic Life in Ancient Subsurface and

- Hydrothermal Settings on Mars. *Nature Geoscience* 11:21–26, doi:10.1038/s41561-017-0015-2.
40. 2017 Collin R. Edwards*, Tullis C. Onstott, Jennifer M. Miller, Jessica B. Wiggins, Wei Wang, Charles K. Lee, S. Craig Cary, Stephen B. Pointing, Maggie C.Y. Lau*. Draft Genome Sequence of Uncultured Upland Soil Cluster Gammaproteobacteria Gives Molecular Insights into High-Affinity Methanotrophy. *Genome Announcements* 5 (17), doi: [10.1128/genomeA.00047-17](https://doi.org/10.1128/genomeA.00047-17).
 41. 2017 Young, E.D., Kohl, I.E., Lollar, B.S., Etiope, G., Rumble III, D., Li, S., Haghnegahdar, M.A., Schauble, E.A., McCain, K.A., Foustoukos, D.I., Sutcliffe, C., Warr, O., Ballentine, C.J., Onstott, T.C., Hosgormez, H., Neubeck, A., Marques, J.M., Pérez-Rodríguez, I., Rowe, A.R., LaRowe, D.E., Magnabosco, C.*, Yeung, L.Y., Ash, J.L., and Bryndzia, L.T. The relative abundances of resolved 12CH₂D₂ and 13CH₃D and mechanisms controlling isotopic bond ordering in abiotic and biotic methane gases. *Geochimica Cosmochimica Acta* 203:235-264.
 42. 2016 Tullis C. Onstott, *Deep Life: The Hunt for the Hidden Biology of Earth, Mars and Beyond*. Princeton University Press, 470 pp. ISBN 978-0-691-09644-5
 43. 2016 Youmi Oh, Brandon Stackhouse*, Maggie C.Y. Lau*, Jonathan Moch*, Tullis C. Onstott, Christian Juncher Jørgensen, Ludovica D’Imperio, Bo Elberling, Craig A. Emmerton, Vincent L. St. Louis and David Medvigy. A scalable model explaining methane consumption in Arctic mineral soils. *Geophysical Research Letters* 43:5143-5150, doi: [10.1002/2016GL069049](https://doi.org/10.1002/2016GL069049).
 44. 2016 Maggie C.Y. Lau*, Thomas L. Kieft, Olukayode Kuloyo, Borja Linage, Esta van Heerden, Melody R. Lindsay, Cara Magnabosco, Wei Wang, Jessica B. Wiggins, Ling Guo, David H. Perlman, Saw Kyin, Henry H. Shwe, Rachel L. Harris*, Youmi Oh, Min Joo Yi and Tullis C. Onstott. An oligotrophic deep subsurface community dependent on syntrophy is dominated by sulfur-driven autotrophic denitrifiers. *Proceedings of the National Academy of Sciences (USA)* 113 (49). doi: 10.1073/pnas.1612244113.
 45. 2016 Magnabosco C.*, Timmers P. H. A., Lau M. C. Y.*, Borgonie G., Linage-Alvarez B., Kuloyo O., Alleva R.*, Kieft T. L., Slater G. S., van Heerden E., Sherwood Lollar B. and Onstott T. C., The case for a dynamical subsurface ecosystem. *BioRxiv*. doi: [10.1101/040204](https://doi.org/10.1101/040204)
 46. 2016 B. Stackhouse*, M.C.Y. Lau*, T. Vishnivetskaya, N. Burton, R. Wang, A. Southworth, L. Whyte, and T. C. Onstott. Atmospheric CH₄ oxidation by Arctic permafrost and mineral cryosols as a function of water saturation and temperature. *Geobiology* 15:94-111, doi: 10.1111/gbi.12193.
 47. 2016 Y. Chen*, Kevin K. Lehmann, Y. Peng, L.M. Pratt, J.R. White, S.B. Cadieux, B. Sherwood Lollar, G. Lacrampe-Couloume and T. C. Onstott. Hydrogen isotopic composition of Arctic and atmospheric CH₄ determined by a portable near-IR cavity ring-down spectrometer with a cryogenic pre-concentrator. *Astrobiology* 16 (10). doi: [10.1089/ast.2015.1395](https://doi.org/10.1089/ast.2015.1395)
 48. 2016 Cara Magnabosco*, Kathleen Ryan*, Maggie C.Y. Lau*, Olukayode Kuloyo, Barbara Sherwood Lollar, Thomas L. Kieft, Esta van Heerden, and T. C. Onstott. A Metagenomic Window into Carbon Metabolism at 3 km Depth in Precambrian Continental Crust. *The ISME Journal* doi: [10.1038/ismej.2015.150](https://doi.org/10.1038/ismej.2015.150)
 49. 2015 G. Borgonie, B. Linage-Alvarez, A.O. Ojo, S.O.C Mundle, L.B. Freese, C. Van Rooyen, O. Kuloyo, J. Albertyn, C. Pohl, E.D. Cason, J. Vermeulen, C. Pienaar, D.

- Litthauer, H. Van Niekerk, J. Van Eeden, B. Sherwood Lollar, T. C. Onstott and E. Van Heerden, Eukaryotic opportunists dominate the deep-subsurface biosphere in South Africa. *Nature Communications* 6:8952 DOI: 10.1038/ncomms9952.
50. 2015 Simkus, D. N., G. F. Slater, B. Sherwood Lollar, K. Wilkie, T. L. Kieft, *C. Magnabosco, *M.C.Y. Lau, M. J. Pullin, S. B. Hendrickson, K. E. Wommack, E. G. Sakowski, E. van Heerden, O. Kuloyo, B. Linage, G. Borgonie, T. C. Onstott, Variations in microbial carbon sources and cycling in the deep continental subsurface. *Geochim. Cosmochim. Acta* 173:264–283.
 51. 2015 Brandon T. Stackhouse*, Tatiana A. Vishnivetskaya, Alice Layton, Susan Pfiffner, Nadia C. Mykytczuk, Lyle G. Whyte, Nabil Saad, and Tullis C. Onstott, Effects of simulated spring thaw of permafrost from mineral cryosol on CO₂ emissions and atmospheric CH₄ uptake. *Journal of Geophysical Research: Biogeosciences* 120: doi:10.1002/2015JG003004.
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Other Publications

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