

Ira Leifer Bubbleology Research International, Inc. CEO

Lab: 1642 Elm Ave, Solvang, CA 93463, 1 805 683 3333 (Tel), ira.leifer@bubbleology.com

Professional Preparation

Univ. of Calif., Santa Barbara Microscale turbulence Post Doc 2000-2001

TNO– The Hague, Holland Bubble Theory and Analysis Post Doc 1998 – 1999

Nat. Univ. of Ireland, Galway Bubble Visualization Post Doc 1996 – 1998

Georgia Institute of Technology Atmospheric Sciences Ph.D., 1995

University of Michigan Aeronomy M. S., 1989

SUNY at Stony Brook Physics, Astronomy B. Sc., 1984

b. Appointments. Positions

Bubbleology Research International CEO 2003-Current

Univ. of California, Santa Barbara Marine Seeps, Bubbles 1999 – 2014

c. Relevant Publications (selected from 130+ peer-reviewed papers)

Leifer, I., C. Melton, D. Blake (2021). Long-term atmospheric emissions from the Coal Oil Point natural marine hydrocarbon seep field, offshore California. *Atmos. Chem. Phys.*, 21(23), 17607–17629. doi:10.5194/acp-21-17607-2021.

Leifer, I., C. Melton, C.S. Chang, D.R. Blake, S. Meinardi, M.T. Kleinman, D.M. Tratt, 2021. Validation of in situ and remote sensing-derived methane refinery emissions in a complex wind environment and chemical implications. *Atmos. Environ.*, 273, 118900. doi:10.1016/j.atmosenv.2021.118900.

Leifer, I., C. Melton, D.M. Tratt, K.N. Buckland, C.C. Chang, L. Clarisse, M. Franklin, J.L. Hall, J.B. Leen, T. Lundquist, M. Van Damme, S. Vigil, S. Whitburn, 2020. Estimating exposure to hydrogen sulfide from animal husbandry operations using satellite ammonia as a proxy: Methodology demonstration. *Sci. Total Environ.*, 707, 134508. doi:10.1016/j.scitotenv.2019.134508.

Leifer, I., C. Melton, M.L. Fischer, R. Chatfield, M. Fladeland, W. Gore, D. Hlavka, L. Iraci, J. Marrero, J-M. Ryoo, T. Tanaka, E. Yates, J. Yorks, 2020. Air pollution inputs to the Mojave Desert by fusing surface mobile and airborne in situ and airborne and satellite remote sensing: A case study of interbasin transport with numerical model validation. *Atmos. Environ.*, 224, 117184. doi:10.1016/j.atmosenv.2019.117184.

Leifer, I., D. Culling, O. Schneising, P. Farrell, M. Buchwitz, J. Burrows, 2013. Transcontinental methane measurements: Part 2. Mobile surface investigation of fossil fuel industrial fugitive emissions. *Atmos. Environ.*, 74, 432–441. doi:10.1016/j.atmosenv.2013.03.018.

c. ii. Additional 4 Publications

Leifer, I., 2022. Oil at sea—how much is too much? *Science*, 376(6599), 1266–1267. doi:10.1126/science.abp8666.

Leifer, I., C. Melton, W. Daniel, J. Deok-Kim, C. Marston, 2022. Measuring floating thick oil from a seep in the Coal Oil Point natural marine hydrocarbon seep field by quantitative thermal oil slick remote sensing. *Remote Sens.*, 14(12), 2813. doi:10.3390/rs14122813.

Leifer, I., M. Kleinman, D. Blake, D. Tratt, C. Marston, 2021. Wildfire smoke exposure: Covid19 comorbidity? *J. Respir.*, 1, 74–79. doi:10.3390/jor1010007.

Leifer, I., 2019. A synthesis review of emissions and fates for the Coal Oil Point marine hydrocarbon seep field and California marine seepage. *Geofluids*, 2019, 4724587. doi:10.1155/2019/4724587.

d. Selected Synergistic Activities

2012 – 2018 FOSTERRS Federal Interagency Oil Spill Response Task Force, NASA Airborne Response to the Gulf of Mexico Oil Spill, lead PI/Chief mission coordinating scientist, Technical Flow Rate Team Member (US Govt team for Seabed Gulf Oil Spill Quantification), Mass Calculator Team Member (US Govt team to assess Gulf Oil Spill Fate).

e. Major Cruise/Campaign Activities

- COMEX Lead PI of a 5-airplane international campaign for GHG in situ and remote sensing.
- Measurements at a North Sea Blowout. 8/2011. Lead PI, Chief Scientist of a 20+ international scientist research team. Nordhoek Pathfinder, 22/4b Block, North Sea.
- Airborne response to the Gulf of Mexico Oil Spill, 5/2010. Chief mission coordinating scientist, NASA ER2 and Aerospace Twin Otter