

Biographical Sketch of

JOHN J. KELLEY

Education:

Ph.D., University of Nagoya, Nagoya, Japan, Water Science /

Chemical Oceanography, 1974

University of Alaska Fairbanks, Graduate Student, Ph.D. Program, and

Professional Staff Member, 1968–1970

University of Washington, Graduate Student and Atmospheric Scientist,

Department of Atmospheric Sciences, 1962–1968

B.S., Pennsylvania State University, Geophysics and Geochemistry, 1955–1958

Member:

American Geophysical Union (AGU)

American Association for the Advancement of Science (AAAS)

President, Arctic Section, 2006-2007

American Meteorological Society (AMS), Chapter President, 1987–1988

Arctic Institute of North America (AINA), Fellow and Governor;

Acting Executive Secretary, U.S. Corporation

Explorers Club of New York, Fellow (Nonresident)

Sigma Xi, President, Alaska Chapter, 1987–1989, 1996–1998; Secretary /

Treasurer 2002-present; NW Regional Director, 2005 -;

Sigma Xi Corporation Executive Committee, 2005 -present)

Canadian Circumpolar Institute, Member, Board of Directors, 1995-1998

Rotary Club (Community Service Organization), President, 1987–1988

College of Earth and Mineral Sciences, Pennsylvania State University, Alumni Board of Directors (1996–1999)

Academic leadership service (2004-2007)

Chair, AAAS-Arctic Division President and Chair, Arctic Science Conference 2007 .

Chair, SFOS Promotion/Tenure Committee, 2001-2003

UAF Promotion/Tenure Committee, 2004-2005 (Co-Chair 2005)

Chair, SFOS Promotion/Tenure Committee, Oceanography, 2006-2007

Coordinator, IMS Seminar Series, 2002/2004, 2006/2007, 2007-2008.

Chair, Science Technical Advisory Panel (STAP) for federal/state North Slope Science Initiative (NSSI), U. S. Department of Interior, BLM, 2006-present.

Co-Chair, UAF Strategic Planning Committee, 2005-2006

Member, Planning Committee, National Academies of Science (NAS),

International Polar Year (IPY) 2004-2006

Professional Experience:

1993–present, Professor, Institute of Marine Science, University of Alaska

Fairbanks

1995–2000), Director, Arctic Center for Applied Research, University of Alaska

Fairbanks

1993–1995, Member, Advisory Panel, Nuclear Wastes in the Arctic, U.S. Congress, Office of Technology Assessment

1992–present, Advisor, Sea Ice Club, Okhotsk Sea Ice Museum, Mombetsu, Hokkaido, Japan

1991–1996, Board of Directors, International Design for Extreme Environments Association of the United States of America

1990–1996, Member, Board of Advisors, Canadian Circumpolar Institute, University of Alberta, Edmonton

1990–1995, Commissioner, Sister City Commission, Fairbanks, North Star

Borough 1987–present, Member, Advisory Committee, Annual International

Symposium of the Okhotsk Sea and Sea Ice, OSCORA, Mombetsu, Hokkaido,

Japan

1987–2004, Affiliate Faculty, University of Hokkaido, Sea Ice Research Laboratory, Mombetsu, Japan

1980–present, Chairman, North Slope Borough Science Advisory Committee

1989–1995, Director, Polar Ice Coring, Office, University of Alaska Fairbanks

1988 (December), Co-Chair of Section on Environmental Pollution and Climate Change - Conference of Arctic and Nordic Countries on Coordination of Research in the Arctic, Leningrad, USSR

1986–1987, State of Alaska Science and Engineering Advisory Commission

1980–1983, Associate Professor, Institute of Marine Science, University of Alaska Fairbanks

1978–1985, Consultant on siting criteria in atmospheric physics and chemistry monitoring. U.N./World Meteorology Organization, Geneva, Switzerland

1977–1980, Director, Naval Arctic Research Laboratory, Barrow, Alaska and Associate Professor, University of Alaska Fairbanks, Fairbanks, Alaska

1976–1977, Liaison/Research Management Officer, Governor's Office, State of Alaska, at NOAA Outer Continental Shelf Environmental Assessment Program (OSCEAP), Boulder, CO (Sabbatical leave, University of Alaska)

1974–1976, Program Manager for Meteorology and Oceanography, Division of Polar Programs, NSF (Professional leave of absence, University of Alaska)

1974, Assistant Professor, Institute of Marine Science, University of Alaska Fairbanks

1974–1976, Principal Investigator, USN-ONR (Arctic Branch), AIDJEX (ALIX) Experiment

1973, Invited Participant, International Bering Sea Oceanography Program, IDOE (NSF)

1973–1974, Co-Principal Investigator, NSF-NCAR Experiment, Tropical Atmospheric Carbon Dioxide and Water Vapor

1971–1972, Co-Principal Investigator, National Science Foundation Grant, Bering Sea Oceanography

1969–1975, Co-Principal Investigator, Tundra Biome, USIBP

1969–1973, Co-Principal Investigator, USN-ONR Contract, Carbon Dioxide in Polar

Seas

1969–1970, Invited Participant in Research Design of Tundra Biome, International Biological Programme (USIBP)

1959–1968, Principal Scientist, Chemical Micrometeorology Program, University of Washington

Current Courses (1999-2007):

MSL 692 Fisheries Acoustics

MSL 497 Acoustical Oceanography

MSL 411 Current Topics on Oceanographic Research

MSL 692D Marine Mammals and Noise

MSL 693 Shipboard Techniques (applied Oceanography)

MSL 111 The Oceans

Inventions:

1973, J.J. Kelley and G. Mimken. Logic controlled solid-state manifold sampling system for liquids and gases. Invention Disclosure submitted to the U.S. Patent Office.

Publications

Kelley, J. J., D. Dasher, M. Cysewski and L. Griffeth. 2006. The ORION project: Monitoring Radionuclides in Arctic and Subarctic Regions. (*Accepted for publication*) In: Proceedings of the International Conference-Monitoring, Assessments of Nuclear and Uncertainties for Nuclear and Radiological Response. Rio de Janeiro, October 2005, 9 pp.

Naidu, A. S., J. J. Kelley and J. J. Goering. 2005. Heavy Metals. In: Mark Nuttall (ed.), Encyclopedia of the Arctic, Vol. 1, Rutledge, New York, pp. 851-852.

Kelley, J. J., A. S. Naidu and J. J. Goering. 2004. Trace metals in sediments of Elson Lagoon (Northwest Arctic Alaska) as related to the Prudhoe Bay industrial region. Proc. 19th Intn'l. Symposium on Okhotsk Sea and Sea Ice. Mombetsu, Hokkaido, Japan, pp.175-179.

Baskaran, B, G. H. Hong, S. Dayton, J. L. Bodkin, and J. J. Kelley. 2003. Temporal variations of natural and anthropogenic radionuclides in sea otter skull tissue in the North Pacific Ocean. J. Environmental Radioactivity 64: 1-18.

Zagorodnov, V.S., L. G. Thompson, E. Mosley-Thompson, F. Huffman, and **J. J. Kelley**. 2002. Intermediate depth ice core drilling support systems: power generators and shelters. In: Ice Drilling Technology 2000, Tokyo, Japan. Mem. Natl. Polar. Res., Spec. Issue 56: 313-320.

Zagorodnov, V.S., L. G. Thompson, E. Mosley-Thompson, and **J. J. Kelley**. 2002. Ice core drilling complications. In: Ice Drilling Technology 2000. Mem. Natl. Polar Res., Spec. issue 56, 196-205.

Kelley, J. 2001. Biography: Vera Alexander. PICES Press. 9:2. 16-19.

Naidu, A. S., J. J. **Kelley** and J. J. Goering. 2003. Three decades of investigations on heavy metals in coastal sediments, North Arctic Alaska: a synthesis. J. Phys. 1V. 107:913-916

Jewett, S. C., Zhang, X., Naidu, A. S., **Kelley, J. J.**, Dasher, D. and Duffy, L. K. 2002. Comparison of mercury and methylmercury in Northern Pike and Arctic grayling from western Alaska rivers. Chemosphere 50:383-392.

Zhang, X., A. S. Naidu, **J. J. Kelley**, S. C. Jewett, D. Dasher and L. K. Duffy. 2001. Baseline concentrations of total mercury and methylmercury in salmon returning via the Bering Sea (1999-2000). Mar. Poll. Bull. 42:993-997.

Kelley, J. J., A. S. Naidu, S. C. Jewett, L. K. Duffy and X. Zhang. 2001. Total and methyl mercury in muscles, livers and eggs of adult salmon (*Oncorhynchus* spp.) from Alaskan rivers draining into the East Bering Sea. Proc. "The 16th International Symposium on Okhosk Sea and Sea Ice" Mombetsu, Hokkaido, Japan, 248-254.

Dasher, D. W. Hanson, S. Read, S. Faller, D. Farmer, W. Efurd, **J. Kelley**, and R. Patrick. 2002. An assessment of the reported leakage of anthropogenic radionuclides from the underground nuclear test sites at Amchitka Island, Alaska, USA, to the surface environment. J. Environmental Radioactivity 60: 165-187.

Mattes, M., **J. Kelley**, and G. Wendler. 1999. On the sastrugi formation in Adelie Land, Eastern Antarctica. In: Proc. of the Fifth Conference on Polar Meterology and Oceanography, 10-15 January, 1999, Dallas, TX. Amer. Meteorological Soc., 460-465.

Zagorodnov, V., L.G. Thompson, **J. J. Kelley**, B. Koci, and V. Mikhalenko. 1998. Antifreeze thermal ice core drilling: An effective approach to the acquisition of ice cores. *Cold Regions Science and Technology* 28(1998), 189-202.

Wendler, G., B. Moore, D. Dissing, and **J. Kelley**. 1997. On the reflectivity and radiation budget of Antarctic sea ice. *Antarctic Journal*. 182-185.

Naidu, A.S., A. Blanchard, **J.J. Kelley**, J.J. Georing, M.J. Hameedi, and M. Baskaran. 1997. Heavy metals in Chukchi Sea sediments as compared to circumarctic shelves. *Mar. Poll. Bull.* 35: 260–269.

Kelley, J. J., T.A. Gosink, and T. Kline. 1996. The variability and causes of the partial pressure of carbon dioxide in the Barents Sea region. Accepted for *Limnol. and Ocean*.

Zagorodnov, V.S., V.A. Morev, O.V. Nagornov, **J. J. Kelley**, T.A. Gosink, and B.R. Koci. 1994. Hydrophilic liquid in glacier boreholes. *Cold Regions Science and Technology* 22, pp. 243–251.

Hulsey, J.L., P.A. Koushki, F.L. Bennett, and J. Kelley. 1992. Cold regions logistics planning and management. *J. Cold Regions Engineering*, American Society of Civil Engineers.

Das, K., B.R. Koci, and J.J. Kelley. 1992. Development of a thermomechanical drill for sampling ice and rock from great depths. *Tunneling and Underground Space Technol.* 7(4):1–6.

Das, D.K., S. Srikanta Jois and J. J. Kelley. 1992. Analytical solutions for determining ice core temperatures. *Mech. Eng. News* 28 (3):9–13.

Gosink, T.A., J.J. Kelley, B.R. Koci, T.W. Burton and M.A. Tumeo. 1991. Butyl acetate, an alternative drilling fluid for deep ice-coring projects. *J. Glaciol.* 27 (125):170–176.

Baskaran, M., J.J. Kelley, A.S. Naidu and D.F. Holleman. 1991. Environmental radiocesium in subarctic and arctic Alaska following Chernobyl. *Arctic* 44 (4):346–350.

Wendler, G. and J.J. Kelley. 1988. On the albedo of snow in Antarctica: A contribution to I.A.G.O. *J. Glaciol.* 34 (116):1–7.

Kelley, J.J. 1987. Carbon dioxide in the arctic environment. *J. Earth Sci.* 35(2):341–354.

Kelley, J.J. and R.H. Geiman (eds.). 1984. Telecommunications: Improving the Quality of Life In the North. Proc. Symposium sponsored by the UAF Telecommunications Committee at the 34th Alaska Science Conference, AAAS, Whitehorse, YT, Canada. Published by Graphic Services, University of Alaska Fairbanks, 86 pp.

- Kelley, J.J. and T.A. Gosink. 1984. Carbon dioxide in the Arctic atmosphere; air-sea and air-land interaction. *In: J. McBeath (ed.), The Potential Effects of Carbon Dioxide Induced Climate Change in Alaska*. School Agricul. Land Res. Mgt., Univ. Alaska Fairbanks. 208 pp.
- Geiman, R.H. and J.J. Kelley (eds.). 1983. Telecommunications in the Arctic: Bridging the Last Frontier. Proc. Symposium sponsored by the UAF Telecommunications Committee at the 33rd Alaska Science Conference, AAAS. Published by Graphic Services, University of Alaska Fairbanks, 130 pp.
- Hoar, C.L. and J.J. Kelley (eds.). 1983. Proc. Symposium on Appropriate Energy Technology for Arctic Regions. Sponsored by the North Slope Borough and the American Association for the Advancement of Science. Published by Seton, Johnson and Odell Inc., Portland, Oregon. 173 pp.
- Albert, T.A., J.J. Kelley and R. Dronenburg (eds.). 1983. Proc. First Conference on the Biology of the Bowhead Whale *Balaena mysticetus*: Population Assessment. Published by the Alaska Eskimo Whaling Commission, Barrow, Alaska. 252 pp.
- Kelley, J.J. and G.A. Laursen. 1982. The Naval Arctic Research Laboratory and Dr. Max E. Britton, pp. 3–15. *In: G.A. Laursen and V.F. Ammirati (eds.), Arctic and Alpine Mycology*. Univ. Washington Press, Seattle. 559 pp.
- Kelley, J.J. 1980. (In Russian). Background levels and biogeochemical cycle of CO₂ in the Arctic: Multimedia Monitoring Requirements, pp. 266–271. Proc. International Symp. on the Multimedia Monitoring of Environmental Pollution, Riga, USSR. Published by Leningrad Hydromet Office. 376 p.
- Gosink, T.A. and J. J. Kelley. 1979. Carbon monoxide evolution from Arctic surfaces during spring thaw. *J. Geophys. Res.* 84 (C11):7041.
- Laursen, G.A. and J.J. Kelley. 1979. Arctic and subarctic research support facilities above the Arctic Circle. *In: L. Underwood, L. Tiezen, A. Callahan and E. Folk (eds.), Comparative Mechanisms of Cold Adaptation*. Academic Press, NY. 379 pp.
- Coyne, P.I. and J. J. Kelley. 1978. Meteorological assessment of CO₂ exchange over an Alaskan arctic tundra, pp. 299–313. *In: L.L. Tiezen (ed.), Vegetation and Production Ecology of an Alaskan Arctic Tundra*, Vol. 12. Springer-Verlag, New York. 668 pp.
- Fletcher, J.O. and J.J. Kelley. 1978. The role of the polar regions in global climate change, pp. 97–116. *In: M.A. McWhinnie (ed.), Polar Research to the Present and Future*. AAAS, Symposium No. 7., Published by Westview Press, Inc., Boulder, CO. 309 p.

Kelley, J.J. 1977. Icebergs - A natural resource. pp. 20–24. *In*: A.A. Huseiny (ed.), *Iceberg Utilization*. Pergamon Press.

Hood, D.W. and J.J. Kelley. 1976. Evaluation of mean vertical transports in an upwelling by CO₂ measurements. *Mar. Sci. Commun.* 2(6):387–411.

Gosink, T.A., J.G. Pearson and J.J. Kelley. 1976. Gas movement through sea ice. *Nature* 263 (5572):41–42

Coyne, P.I. and J.J. Kelley. 1975. Carbon dioxide exchange over the Alaskan arctic tundra: Meteorological assessment by an aerodynamic method. *J. Appl. Ecol.* 12:587–611.

Kelley, J.J. 1974. On the role of calibration integrity in atmospheric trace gas monitoring. Proc. 11ème Colloque International sur les Atmosphères Polluées, IRCHA, Paris, France.

Kelley, J.J. 1974. Dynamics of the exchange of carbon dioxide in arctic and subarctic regions. Ph.D. Thesis, University of Nagoya, Water Research Institute, Nagoya, Japan. 171 pp.

Gordon, L.I., P.K. Park, J.J. Kelley and D.W. Hood. 1973. Carbon dioxide partial pressure in North Pacific surface waters. 2. General late summer distribution. *Mar. Chem.* 1:191–198.

Kanamori, S., J.J. Kelley and D.W. Hood. 1973. Determination of equilibrium partial pressure of carbon dioxide in sea-water, pp. 158–159. Proc. Oceanographical Society of Japan, Tokyo University of Fisheries, Tokyo, Japan, June 6–11, 1973.

Kanamori, S., J.J. Kelley and D.W. Hood. 1973. The distribution of equilibrium partial pressure in the Bering Sea. pp. 45–48. Proc. Geochemical Society of Japan, Akita University, Akita, Japan, October 1–3, 1973.

Coyne, P.I. and J.J. Kelley. 1973. Equilibration partial pressure of carbon dioxide in arctic surface waters. *Limnol. Oceanogr.* 19(6):928–938.

Coyne, P.I. and J.J. Kelley. 1973. Variations in carbon dioxide across an arctic snowpack in spring. *J. Geophys. Res.* 79(6):799–802.

Kelley, J.J. 1973. Baseline observations of atmospheric trace gases in the arctic atmosphere of North America. Invited paper. Proc. TECOMAP Conference, sponsored by United Nations WMO/WHO, August, 1973, Helsinki, Finland.

Kelley, J.J. 1973. Surface ozone in the arctic atmosphere. *In: Pure and Applied Geophysics*, 106–108:1106–1115. Birkhauser Verlag, Basel, Switzerland.

Kelley, J.J. 1973. Microclimatological investigations near the arctic tundra surface. pp. 109–126. Invited Paper. Proc. 25th Anniversary of Naval Arctic Research Laboratory Symposium, 1972. *In: Alaska Arctic Tundra, AINA Tech. Paper No. 25.*

Coyne, P.I. and J.J. Kelley. 1972. Carbon dioxide exchange in the Alaskan arctic tundra. Meteorological assessment by the aerodynamic method. Proc. Tundra Biome Symposium USIBP, Lake Wilderness Center, University of Washington, Seattle. pp. 36–39.

Miller, R.F., D.C. Berkshire, J.J. Kelley and D.W. Hood. 1971. A method for the determination of the reaction rates of carbon dioxide with water and hydroxyl ion in seawater. *Envir. Sci. Tech.* 5:127–133.

Kelley, J.J., L.L. Longerich and D.W. Hood. 1971. Effect of upwelling mixing and high primary productivity on carbon dioxide concentrations in surface waters of the Bering Sea. *J. Geophys. Res.* 76(36):3687–3693.

Kelley, J.J. and D.W. Hood. 1971. Carbon dioxide in the Pacific Ocean and Bering Sea: Upwelling and mixing. *J. Geophys. Res.* 76(36):745–752.

Kelley, J.J. and D.W. Hood. 1971. Carbon dioxide in the surface water of the ice-covered Bering Sea. *Nature* 229(5279):37–39.

Coyne, P.I. and J.J. Kelley. 1971. Release of carbon dioxide from frozen soil to the arctic atmosphere. *Nature* 234(5329):407–408.

Johnson, P.L. and J.J. Kelley. 1971. Dynamics of carbon dioxide in the arctic biosphere. *Ecology* 51 (1):73–80.

Kelley, J.J., Jr. 1970. Carbon dioxide in the surface waters of the North Atlantic Ocean, Barents and Kara Seas. *Limnol. Oceanogr.* 15(1):80–87.

Kelley, J.J., Jr. and D.F. Weaver. 1969. Physical processes of the surface of the arctic tundra. *Arctic* 22(4):425–437.

Kelley, J.J., Jr. 1969. Investigations of atmospheric trace gases and suspended particulate matter on Mt. Olympus, Olympic National Park, Washington. *J. Geophys. Res.* 74(2):435–443.

Kelley, J.J., Jr., D. Weaver and B. Smith. 1968. Variation of carbon dioxide under snow in the Arctic. *Ecology* 49(2):358–361.

Kelley, J.J., Jr. and T. McTaggart-Cowan. 1968. The vertical gradient of net oxidant near the ground surface at Barrow, Alaska. *J. Geophys. Res.* 73(10):3328–3330.

Kelley, J.J., Jr. 1968. Observations of carbon dioxide in the atmosphere over the western United States. *J. Geophys. Res.* 74(6):1688–1693.

Kelley, J.J., Jr. 1968. Carbon dioxide in the sea water under the arctic ice. *Nature* 218(5144):1–5.

Kelley, J.J., Jr. 1968. Carbon dioxide and ozone studies in the arctic atmosphere. Invited paper. Proc., AINA-ONR Drifting Stations Symposium. Arctic Institute of North America, Washington, D.C.

Kelley, J.J., Jr. and D.F. Weaver. 1966. Carbon dioxide and ozone in the arctic atmosphere. Proc. 16th Alaska Science Conf. 151–167 pp.

Gudiksen, P.H., P.W. Hildebrandt and J.J. Kelley, Jr. 1966. Comparison of an electrochemical and a calorimetric determination of ozone. *J. Geophys. Res.* 71(2):5221–5223.

Kelley, J.J., Jr. and E. LaChapelle. 1966. Atmospheric carbon dioxide variations on Mt. Olympus, Washington. *J. Geophys. Res.* 71(8):2173–2174.

Proceedings

Misra, D., Naidu, A. S., Kelley, J. J., Venatesan, M. I., and Mueter, F. J. 2006. Heavy metals and hydrocarbons in Beaufort Lagoon sediments, North Arctic Alaska. In: Y. J. Xu and V. P. Singh (eds.), *Coastal Environment and Water Quality, Vol. II*, Water Resources Publications, LLC, Highlands Ranch,

Co, 1-16 pp.

Kelley, J.J. 1996. (Invited Keynote Address) Seeking clues to ice cores in our earth's climate history. *In: Proceedings of the 11th International Symposium on Sea Ice and the Okhotsk Sea*, Mombetsu, Hokkaido, Japan, February 23–26, 1996.

Kelley, J.J.. 1996. CO₂ variability in the Barents Sea. *In: Proceedings of the 11th International Symposium on Sea Ice and the Okhotsk Sea*, Mombetsu, Hokkaido, Japan, February 23–26, 1996.

Kelley, J.J. and D. Dasher. 1996. Alaska Native Marine Science Intern Program - Improving the communication of the results of environmental research and monitoring. (Poster Session) *In: Proceedings of Arctic Nuclear Waste Assessment Conference*, Snowbird, Utah, May 5–11, 1996.

Kelley, J.J. and D. Dasher. 1996. Radioactive contaminants: Potential risk to Arctic Ocean, Bering Sea, and North Pacific Ocean ecosystems. *In: Proceedings of the 11th International Symposium on*

Sea Ice and the Okhotsk Sea, Mombetsu, Hokkaido, Japan, February 23–26, 1996.

Naidu, A.S. and J.J. Kelley. 1996. Heavy metal baseline studies in arctic seas: Is there evidence of anthropogenic influence? (Poster Session) *In: Proceedings of the Arctic Nuclear Waste Assessment Conference, Snowbird, Utah, May 5–11, 1996.*

Das, D., K. Stanford and J. Kelley. 1995. A thermo-photovoltaic generator for production of heat and electricity. *In: Proceedings of AAAS-46th Arctic Science Conference. Anchorage, AK.*

Naidu, S., J. Hameedi, J. Kelley, J. Goering and A. Blanchard. 1995. Heavy metal contents in sediments of Northeast Chukchi Sea, Alaskan Arctic. Report to Cooperative Institute for Arctic Research (CIFAR), UAF.

Gosink, T.A., J.J. Kelley, M.A. Tumeo, K. Stanford, and V. Zagorodnov. 1994. Fluids for use in deep ice core drilling. *Mem. Nat'l Inst. of Polar Res., Tokyo, Japan, 49. pp. 335–346. Conf. Proc. Conf. Comm. Reviewed.*

Kelley, J.J., K. Stanford, B. Koci, M. Wumkes, and V. Zagorodnov. 1994. Ice Coring and drilling technologies developed by the Polar Ice Coring Office. *Mem. Nat'l Inst. of Polar Res., Tokyo, Japan, 49. pp. 24–40. Conf. Proc., Conf. Comm. Reviewed.*

Nagornov, O.V., V.S. Zagorodnov, and J.J. Kelley. 1994. Effect of a heated drilling bit and borehole liquid on thermoelastic stress in a borehole. *Mem. Nat'l Inst. of Polar Res., Tokyo, Japan, 49. pp. 334–326. Conf. Proc., Conf. Comm. Reviewed.*

Zagorodnov, V., J.J. Kelley, L. Thompson, and O. Watanabe. 1994. Continuous study of an ice core: ECM, fine stratigraphy, air bubbles, and crystals. *Mem. Nat'l Inst. of Polar Res., Tokyo, Japan, 49. pp. 281–290. Conf. Proc., Conf. Comm. Reviewed.*

Zagorodnov, V.S., J.J. Kelley, and O.V. Nagornov. 1994. Drilling of glacier boreholes with a hydrophilic liquid. *Mem. Nat'l Inst. of Polar Res., Tokyo, Japan, 49. pp. 153–164. Conf. Proc., Conf. Comm. Reviewed.*

Zagorodnov, V.S., J.J. Kelley, and B.R. Koci. 1994. Directional Drilling. *Mem. Nat'l Inst. of Polar Res., Tokyo, Japan, 49. pp. 165–171. Conf. Proc., Conf. Comm. Reviewed.*

Li, F., B. Koci and J. Kelley. 1992. Study of ice borehole closure by finite element method. Pp. 77–89 *In: T.K.S. Murthy, W.M. Sackinger and P. Wadhams (eds.), Advances in Ice Technology, Proc. 3rd Intl. Conference on Ice Technology (ITC 92), 365 pp.*

Kelley, J.J., E.L. Saulitis, M. Castellini, T.A. Gosink, M. Aota and K. Shirasawa. 1992. Environmental acoustics in ice-covered seas. *In: Proc. 7th Intl. Symposium on Sea Ice and the*

Okhotsk Sea, sponsored by the University of Hokkaido, Japan, February 2–5, 1992.

Kelley, J.J., T.A. Gosink, T.C. Kline and M. Aota. 1992. Carbon dioxide and other trace gases in Arctic Seas. *In: Proc. 7th Intl. Symposium on Sea Ice and the Okhotsk Sea*, sponsored by the University of Hokkaido, Japan.

Koci, B., K. Stanford and J.J. Kelley. 1992. Ice core drilling in high altitude remote areas. *In: Proc. IDEEA-ONE Conference*, University of Houston, November 12–15, 1991.

Kelley, J.J. 1991. Invited paper. Industrial Development in Arctic Regions - Assessment of Environmental Effects. *In: Proc. 1st Intl. Symposium on Engineering Ecology*, Zvenigorod (Moscow), USSR, October 21–24, 1991.

Proenza, L., J.J. Kelley, B. Koci, J. Sonderup and M. Wumkes. 1990. Shallow and deep ice coring devices developed by the Polar Ice Coring Office. *In: Proc. POAC Conference*, Copenhagen, Denmark, September 1990.

Proenza, L., J.J. Kelley, K. Swanson, J. Klinck, S. Peterzen and T. Gacke. 1990. Facilities plan and protocol for the support of the National Science Foundation sponsored Greenland Ice Sheet Program: Deep Ice Core Drilling Effort. *In: Proc. POAC Conference*, Copenhagen, Denmark, September 1990.

Kelley, J.J., S. Meir and G. Wendler. 1990. On the effects of sastrugi on snow alliedo. *In: Proc. 4th Intl. Symposium on the Okhotsk Sea and Sea Ice*, sponsored by the University of Hokkaido, Japan, February 4–6, 1990. Published by Okhotsk Sea and Cold Ocean Research Association, 269 pp.

Kelley, J.J. and B. Koci. 1990. Development of deep ice coring devices. *In: Proc. 4th Intl. Symposium on the Okhotsk Sea and Sea Ice*, sponsored by the University of Hokkaido, Japan, February 4–6, 1990. Published by Okhotsk Sea and Cold Ocean Research Association, 269 pp.

Gosink, T., J.J. Kelley, B. Koci, T. Burton and M. Tumeo. 1990. Butyl acetate: A drilling fluid for the extraction of deep ice cores from glaciers. *In: Proc. 4th Intl. Symposium on the Okhotsk Sea and Sea Ice*, sponsored by the University of Hokkaido, Japan, February 4–6, 1990. Published by Okhotsk Sea and Cold Ocean Research Association, 269 pp.

Kelley, J.J. 1990. Carbon dioxide and other trace gases in the arctic environment. *In: V.M. Kotlyakov and V.E. Sokolov (eds.), Arctic Research Advances and Prospects*, Academy of Sciences of the USSR, Vol. 1, pp. 212–224. *Proc. Conference of Arctic and Nordic Countries on Coordination of Research in the Arctic*, USSR, Leningrad, December 12–15, 1988. 365 pp.

Kelley, J.J. 1988. Effects of permafrost on arctic landscapes and structures. *In: Proc. 3rd Intl. Symposium on the Okhotsk Sea and Sea Ice*, sponsored by the University of Hokkaido, Japan, February 9–11, 1988.

Gosink, T.A. and J.J. Kelley. 1988. Carbon dioxide studies in the arctic atmosphere above the tundra and sea ice. *In: Proc. 3rd Intl. Symposium on the Okhotsk Sea and Sea Ice*, sponsored by the University of Hokkaido, Japan, February 9–11, 1988.

Kelley, J.J., T.A. Gosink and M. Aota. 1988. Sea ice and its contribution to the hydroacoustic noise regime in the coastal waters off Mombetsu, Hokkaido. *In: Proc. 3rd Intl. Symposium on the Okhotsk Sea and Sea Ice*, sponsored by the University of Hokkaido, Japan, February 9–11, 1988.

Kelley, J.J. and T. A. Gosink. 1987. Carbon dioxide and other trace gases in tundra surface waters. *In: Proceedings of SCOPE/UNEP Workshop on Carbon and Nutrient Transport in Lakes and Estuaries*, Fairbanks, Alaska, August 11–16, 1986.

Kelley, J.J. 1987. Science and development: A management problem. Pp. 44–47. *In: M.R. Freeman and C.W. Slaughter (eds.), Proc. of the UNESCO-MAB and the Biosphere International Conference (August 1985)*, U.S. Department of State, Washington, D.C., 104 pp.

Kelley, J.J. 1986. Integrated environmental research programs in arctic regions: A case for long-term multidisciplinary studies and multi-institutional cooperation. Invited paper. *In: Proceedings of the Symposium on Integrated Global Monitoring of the State of the Biosphere*, Tashkent, USSR, October 1985.

Kelley, J.J. 1985. Overview on bowhead whale behavior and disturbance. *In: Proceedings of the Third Conference on the Biology of the Bowhead Whale (*Balaena mysticetus*)*, January 1985. North Slope Borough, Barrow, Alaska. 190 pp.

Technical Reports

Gosink, T. and J.J. Kelley. 1991. Butyl acetate vapor detection methods. PICO Report TR-91-1 (March 1991). 16 pp.

Gosink, T., B. Koci and J.J. Kelley. 1991. The use of aqueous ethanol for ice core drilling in glaciers. PICO Report TR-91-2 (July 1991). 12 pp.

Kelley, J.J. 1991. Brief description of PICO program activities. PICO Report OR-91-2 (February 1991). 40 pp.

Kelley, J.J., H. Stockholm and D. Dahl (eds.). 1990. New technological developments in support of Arctic research. Proc. Workshop at the 40th Annual Arctic Science Conference, AAAS and Arctic Research Consortium of the United States. PICO Report CP-90-04 (December 1990). 48 pp.

Proenza, L., J.J. Kelley, B. Koci, J. Sonderup and M. Wumkes. 1990. Shallow and deep ice coring devices developed by the Polar Ice Coring Office. PICO Report CP-90-02 (May 1990). 13 pp.

Proenza, L., J.J. Kelley, K. Swanson, J. Klinck, S. Peterzen and T. Gacke. 1990. Facilities plan and protocol for the support of the National Science Foundation sponsored Greenland Ice Sheet Project Two: Deep Ice Core Drilling Effort. PICO Report CP-90-3 (May 1990). 9 pp.

Naidu, A.S., T.A. Gosink, R.C. Highsmith and J.J. Kelley. 1988. A preliminary study of the trace element concentrations in sea waters, sediments and selected biological tissues, biological oxygen demand (BOD) and light transmission in the Nome inshore, Norton Sound, Alaska. Report to the Alaska OCS Region, Minerals Management Service, U.S. Department of the Interior, 106 pp.

Baskaran, M., J.J. Kelley and A.S. Naidu. 1988. Radiocesium and radiopotassium concentrations in Alaskan soils, plants and animals. Institute of Marine Science, University of Alaska Fairbanks, Technical Publication IMS-R88-1 (August 1988), 15 pp.

Saklad, H.M. and J.J. Kelley. 1986. A system to analyze arctic marine mammal vocalizations. Institute of Marine Science, University of Alaska Fairbanks, 45 pp.

Kelley, J.J. and D. Foster. 1986. Climatological observations in the Phillip Smith Mountains of the North Slope, Alaska. Series 2, Institute of Marine Science, University of Alaska Fairbanks. 250 pp.

Kelley, J.J. 1985. Climatological observations in the Phillip Smith Mountains of the North Slope, Alaska. Series 1, Institute of Marine Science, University of Alaska Fairbanks. 190 pp.

Gosink, T.A. and J.J. Kelley. 1984. Carbon dioxide and methane in the atmosphere and ocean surface waters of the Indian Ocean and Antarctic regions. Final Report (1 of 5) to the U.S. Department of Energy, Contract No. DE-AT06-80EV10429, 41 pp.

Kelley, J.J. 1983. Report of the North Slope Borough Science Advisory Committee: 1982–1983. Institute of Marine Science, University of Alaska Fairbanks, 20 pp.

Kelley, J.J. and G.A. Laursen. 1980. Investigation of the occurrence and behavior patterns of whales in the vicinity of the Beaufort Sea lease area. Final Report to the Bureau of Land Management. 753 pp.

Kelley, J.J. and G.A. Laursen. 1979. Investigation of the occurrence and behavior patterns of whales in the vicinity of the Beaufort Sea lease area. Report to the Bureau of Land Management. 48 pp.

Kelley, J.J. and T.A. Gosink. 1979. Gases in sea ice: 1975–1979. Final Report to the Office of Naval Research, Arlington, Virginia. 104 pp.

Kelley, J.J. 1978. Thirty years of research at the Naval Arctic Research Laboratory. Proc. 11th International Polar Meeting, Berlin, October 4–7, 1978.

Kelley, J.J. and T.A. Gosink. 1978. Trace gases in the arctic atmosphere. Proc. 11th International Polar Meeting, Berlin, October 4–7, 1978.

Gosink, T.A. and J.J. Kelley. 1978. Gases in sea ice. Annual Report to the Office of Naval Research, Arlington, Virginia. 91 pp.

Gosink, T.A. and J.J. Kelley. 1977. Gases in sea ice. Annual Report to the Office of Naval Research, Arlington, Virginia. 49 pp.

Kelley, J.J. 1977. Icebergs - A natural resource. Proc. First International Iceberg Symposium, Ames, Iowa.

Kelley, J.J. and T.A. Gosink. 1976. Gases in sea ice. Annual Report to the Office of Naval Research, Arlington, Virginia. 15 pp.

Hood, D.W. and J.J. Kelley. 1974. Upwelling phenomena in the eastern Aleutian passes with a suggested method for measuring material transport. Pp. 245–277. *In*: A.Y. Takenouti and D.W. Hood (eds.), Bering Sea Oceanography: An Update, 1972–1974. Report R75-2, Institute of Marine Science, University of Alaska Fairbanks.

Kelley, J.J., D.W. Hood, J.J. Goering, R. Barsdate, M. Nebert, L. Longerich, J. Groves and C. Patton. 1973. Oceanography of the Bering Sea. Phase 2. Turbulent upwelling and water mass identification in the vicinity of Samalga Pass, eastern Aleutian Islands. Final Report to the National Science Foundation, Institute of Marine Science, University of Alaska Fairbanks, Volume 2, Part 2 (Methods and Data), Report 71-10. 263 pp.

Kelley, J.J., D.W. Hood, and L. Longerich. 1973. Oceanography of the Bering Sea. Phase 2. Turbulent upwelling and water mass identification in the vicinity of Samalga Pass, eastern Aleutian Islands. Final Progress Report to the National Science Foundation, Institute of Marine Science, University of Alaska Fairbanks, Volume 2, Part 1, 115 pp.

Coyne, P.I. and J.J. Kelley. 1973. Carbon dioxide dynamics on the arctic coastal plain. U.S. Army Cold Regions Research and Engineering Laboratory (CRREL), Final Report, 119 pp.

Hobbie, J.E., R.J. Barsdate, V. Alexander, D.W. Stanley, C.P. McRoy, R.G. Stross, A. Bierle, R.D. Dillon, M.C. Miller, P.I. Coyne and J.J. Kelley. 1972. Carbon flux through a tundra ecosystem at Barrow, Alaska. USIBP Tundra Biome Report 72-1, 29 pp.

Kelley, J.J. and P.I. Coyne. 1972. A case for comparison and standardization of carbon dioxide

reference gases. Eastern Deciduous Forest Biome Report 72-28, U.S. Atomic Energy Commission, Oak Ridge, Tennessee. 24 pp.

Hood, D.W., J.J. Goering, J.J. Kelley, R. Barsdate, P. Kinney, G.D. Sharma, C.P. McRoy, W. Shiels, D. Brickell, J. Groves and L. Longerich. 1971. Oceanography of the Bering Sea. Phase 1. Turbulent upwelling and biological productivity mechanisms in the Southeastern Bering Sea and Aleutian Islands. Institute of Marine Science, Volume 1, Report 71-9. 263 pp.

Longerich, L.L., M. Billington, V. Alexander, J.J. Kelley and D.W. Hood. 1971. Carbon dioxide and primary productivity in the glacial fjord system of Southeast Alaska. Report R71-19, Institute of Marine Science, University of Alaska Fairbanks.

Kelley, J.J. and D.W. Hood. 1971. Carbon dioxide in surface waters of the Barents Sea: *Southwind* Expedition, 1970. Report R71-20, Institute of Marine Science, University of Alaska Fairbanks, 9 pp.

Kelley, J.J. 1971. Observations of carbon dioxide in the surface waters of the North Atlantic Ocean, Barents and Kara Seas. Scientific Report, Department of Atmospheric Sciences, University of Washington, 18 pp.

Kelley, J.J. and P.L. Johnson. 1970. Observations of carbon dioxide and plant growth in an arctic ecosystem. Scientific Report, Department of Atmospheric Sciences, University of Washington, 130 pp.

Kelley, J.J. and A. Hanson. 1970. Observations of carbon dioxide in the surface waters of the eastern North Pacific Ocean and Bering Sea. Scientific Report, Department of Atmospheric Sciences, University of Washington, 38 pp.

Kelley, J.J., Jr. 1969. An analysis of carbon dioxide in the arctic atmosphere near Barrow, Alaska, 1961–1967. Scientific Report No. 3, Department of Atmospheric Sciences, University of Washington, 172 pp.

Kelley, J.J., Jr. and D.F. Weaver. 1968. Measurements of the thermal regime of the soil and atmosphere near an arctic tundra surface. Scientific Report No. 12, Department of Atmospheric Sciences, University of Washington, 34 pp.

Kelley, J.J., Jr. and S.M. Hodge. 1967. Measurements of the chemical constitution of the atmosphere at the Blue Glacier field station, Mt. Olympus, Washington. Scientific Report No. 10, Department of Atmospheric Sciences, University of Washington, 44 pp.

Kelley, J.J., Jr. 1967. Atmospheric ozone investigations at Barrow, Alaska, 1965. Scientific Report, Department of Atmospheric Sciences, University of Washington, 96 pp.

Kelley, J.J., Jr. 1966. An analysis of carbon dioxide in the arctic atmosphere, Part 2. Scientific Report No. 7, Department of Atmospheric Sciences, University of Washington, 133 pp.

Kelley, J.J., Jr., D.T. Bailey and B.J. Lieske. 1964. Radioactive energy exchange over arctic land and sea. Scientific Report No. 5, Department of Atmospheric Sciences, University of Washington, 125 pp.

Kelley, J.J., Jr. 1964. An analysis of carbon dioxide in the arctic atmosphere, Part 1. Scientific Report No. 3, Department of Atmospheric Sciences, University of Washington, 120 pp.