DEPARTMENT OF THE ARMY
ENGINEER RESEARCH AND DEVELOPMENT CENTER, CORPS OF ENGINEERS
COLD REGIONS RESEARCH AND ENGINEERING LABORATORY
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4 April 2016

To the SEARCH Science Steering Committee,

It is my pleasure to nominate Dr. Donald Perovich for membership to the SEARCH Science Steering Committee.

I expect Don is already known to many of you. Don is well and widely recognized for his significant scientific contributions to an improved understanding of the atmosphere-sea ice-ocean system in the Arctic. For instance, his observations on the fate of solar radiation, with respect to the sea ice cover, have led to important insights on the processes contributing to the rapid decline in the extent of the summer sea ice cover and the effects of this change on primary productivity.

Don is also renowned for his communications skills. He has a rare knack for presenting complex scientific concepts in a way that is accessible to broad audiences, often weaving in his clever sense of humor. Don is and will be an excellent spokesperson for SEARCH.

Don's combined scientific and communication skills and strong work ethic have led to numerous invitations for committee appointments. Don's significant ability as a consensus-builder are frequently demonstrated in these venues. After listening carefully to a (sometimes heated) discussion, he can be counted on to succinctly summarize the key points and outline an agreeable way forward. This ability benefits from Don's broad understanding of the Arctic system and his appreciation for the need to apply a cross-disciplinary approach in responding to a rapidly changing Arctic.

Don's strong commitment to and understanding of the SEARCH vision are clear. He has long been affiliated with SEARCH, presently serving as a member of the SEARCH Observing Panel. Don is also currently serving on a number of international committees, focused on major, collaborative initiatives. Through this lens, Don will come to the SEARCH SSC table with a very thorough understanding of how SEARCH can contribute to and benefit from strategic coordination with other relevant programs, agencies and organizations.

Don's election to the SEARCH SSC seems a natural progression, recognizing his many contributions to SEARCH and taking advantage of his many talents to guide, promote, and realize the SEARCH vision.

Best regards,

Jackie Richter-Menge

Senior Research Engineer
ERDC-CRREL
72 Lyme Road
Hanover, NH 03755
Phone: 603.646.4266

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DONALD K. PEROVICH

EDUCATION

Ph.D. in Geophysics, University of Washington, 1983
M.S. in Geophysics, University of Washington, 1979
B.S. in Physics, Michigan State University, 1972

PROFESSIONAL RECORD

1986-present Research Geophysicist, ERDC – Cold Regions Research and Engineering Laboratory.
1983-1985 Postdoctoral Research Associate, Department of Atmospheric Sciences, U Washington.
1974-1983 Predoctoral Research Assistant in Geophysics Program, University of Washington.

ADJUNCT POSITIONS

Adjunct Professor, Thayer School of Engineering, Dartmouth College.
Affiliate Professor, Geophysical Institute, University of Alaska Fairbanks

PATENTS

Patent 12,569,966 (pending) for *Buoy for automated data collection and transmittal*

AWARDS/HONORS

Fellow, American Geophysical Union, 2013.
Commander's Award for Civilian Service, Partnership in Education Award, 2013.
NASA Group Achievement Award, 2012.
CRREL Lifetime Achievement Award, 2011.
U.S. Coast Guard Arctic Service Medal, 2010, 2011.
ERDC Research and Development Achievement Award, 2010.
CRREL Award for Excellence in Science and Engineering, 2007.
CRREL Award for Excellence in Science and Engineering, 2006.
Commander's Award for Civilian Service, Partnership in Education Award, 2002.
National Science Foundation Arctic Service Award, 1999.
Department of the Army Meritorious Civilian Service Award, 1999.
Best lecturer, *Physics of Ice Covered Seas, An Advanced Study Institute*, Savonlinna, Finland, 1994.

PROFESSIONAL ASSOCIATIONS AND ACTIVITIES

Membership
International Glaciological Society, 1975 – present
American Geophysical Union, 1975 – present
The Electromagnetics Academy, 1991 – 2009

Associate Editor

Frontiers in Earth Science: Cryospheric Sciences, 2015 - present
Field Techniques in Sea Ice Research, University of Alaska Press, 2008 – 2009.
Annuals of Glaciology, Volume 44, Symposium on Sea Ice, 2005 – 2006.
Journal of Geophysical Research, 1989 – 1994

Current Committees

Chair – Climate and Cryosphere Arctic Sea Ice Working Group, 2010 – present.
Member – Climate and Cryosphere Arctic Sea Ice Working Group, 2007 – present.
Member – World Weather Research Program, Year of Polar Prediction Steering Committee, 2013 – present.
Member – Study of Environmental Arctic Change Observing Panel, 2008 – present.
Member – Sea Ice Outlook Advisory Group, 2008 – present.
Member – International Ocean Color Coordinating Group working group on Ocean Color Remote Sensing in Polar Seas, 2011 – present.

Past Committees

Member – Arctic Icebreaker Coordinating Committee, 2008 – 2014.
Member – 13th International Conference on the Physics and Chemistry of Ice, Local organizing committee.
Member – Climate Change and the Cryosphere: Snow, Water, Ice, and Permafrost in the Arctic Working Group, 2008 – 2013.
Lead author – Chapter 2: Physical feedbacks and forcings, in Climate Change and the Cryosphere: Snow, Water, Ice and Permafrost in the Arctic (SWIPA)
Member – National Science Foundation Arctic System Science Committee, 2002 – 2009.
Member – Fresh Water Initiative Science Steering Committee, 2002 – present
Member – Science Steering Committee and Editorial Committee for International Glaciological Society International Symposium on Sea Ice, 2004 – 2006.
Chair – Oceans Atmosphere Ice Interaction Science Steering Committee, 2002 – 2005.
Member – Symposium Scientific Committee, IAHR 16th International Symposium on Ice, 2002.
Member - NSF-ARCSS, Ocean Atmosphere Ice Interaction, Science Steering Committee 1996 – 2001
Member – Scientific Advisory Committee, ETOPIM 6: Sixth International Conference on the Electrical Transport and Optical Properties of Inhomogeneous Media, 2002.
Chair - American Geophysical Union Committee on Snow Ice and Permafrost, 1994 – 1996
Member - American Geophysical Union Committee on Snow Ice and Permafrost, 1990-2000
Member – Council International Glaciological Society, 1999 – 2002.
Member – Local organizing committee International Glaciological Society Symposium on Sea Ice and Its Interactions, 1998 – 2000.
Chair - SHEBA Science Working Group 1996
Member - SHEBA Science Working Group 1993 – 1996
Member - American Meteorol. Soc. Comm. on Polar Meteorology and Oceanography, 1991 – 1993

Chief Scientist

ICESCAPE: Impact of Climate Change on the Ecosystems and Chemistry of the Arctic Pacific Environment, 2009 – present (co – chief).
SHEBA: Surface Heat Budget of the Arctic Ocean 1997-2000.
EMPOSI '94 field experiment, Barrow Alaska, 1993 – 1994 .

JOURNAL PUBLICATIONS AND BOOK CHAPTERS

Jung, T., N. Gordon, P. Bauer, D. Bromwich, M. Chevallier, J. Day, J. Dawson, F. Doblas-Reyes, C. Fairall, H. Goessling, M. Holland, J. Inoue, T. Iversen, S. Klebe, P. Lemke, M. Losch, A. Makshtas, B. Mills, P. Nurmi, D. Perovich, P. Reid, I. Renfrew, G. Smith, G. Svensson, M. Tolstykh, and Q. Yang, 2016: Advancing polar prediction capabilities on daily to seasonal time scales. Bull. Amer. Meteor. Soc. doi:10.1175/BAMS-D-14-00246.1, in press.

Katlein, C., D. Perovich, and M. Nicolaus, Geometric effects of an inhomogeneous sea ice cover on the under ice light field, *Frontiers in Earth Science: Cryospheric Sciences*, in press.

Wang, C., M.A. Granskog., S.R. Hudson, S. Gerland, A.K. Pavlov, D.K. Perovich, and M. Nicolaus, Atmospheric conditions in the central Arctic Ocean melt seasons of 2012 and 2013: Impact on surface conditions and solar energy deposition into the ice oceans system, *J. Geophy. Res.*, accepted.

Comiso, J., D. Perovich, and K. Stamnes, Chapter 2 The Polar Environment: Sun, Clouds, and Ice, in *Ocean Colour Remote Sensing in Polar Seas*, p 5-25, in press.

E. Carmack, I. Polyakov, L. Padman, I. Fer, E. Hunke, J. Hutchings, J. Jackson, D. Kelley, R. Kwok, C. Layton, H. Melling, D. Perovich, O. Persson, B. Ruddick, M.-L. Timmermans, J. Toole, T. Ross, S. Vavrus, and P. Winsor, 2015: Toward Quantifying the Increasing Role of Oceanic Heat in Sea Ice Loss in the New Arctic. *Bull. Amer. Meteor. Soc*., 96, 2079–2105. doi:10.1175/BAMS-D-13-00177.1

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Istomina, L, G. Heygster, M. Huntemann, P. Schwarz, G. Birnbaum, C. Polashenski, D. Perovich, E. Zege, A. Malinka and A. Prikchach, The melt pond fraction and spectral sea ice albedo retrieval from MERIS data: validation and trends of sea ice albedo and melt pond fraction in the Arctic for years 2002-2011, *The Cryosphere* 9, 1551–1566, doi:10.5194/tc-9-1551-2015, 2015.

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Nicolaus, M., C. Wang, S. Gerland, L. Zhijun, B. Cheng, D. Perovich, M. Gransko, S. Liqiong, L. Ruibo, L. Qun, and L. Peng, Advancing the understanding of variations of Arctic sea ice optical and thermal behaviors through an international research and mobility project, *Advances in Polar Science*, 26, 2, 179-187., 2015.

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Knepp, T.N., J. Bottenheim, M. Carlson, D. Carlson, D. Donohoue, G. Friederich, P.M. Matrai, S. Netcheva, D.K. Perovich, R. Santini, P.B. Shepson, W. Simpson, R. Stehle, T. Valentic, C. Williams, and P.J. Wyss, Development of an autonomous sea ice tethered buoy for the study of ocean – atmosphere – sea ice – snow pack interactions: the O-buoy, *Atmospheric Measurement Technology*, 3, 1 – 13, 2010.

Loose, B., P. Schlosser, D. Perovich, W.R. McGillis, J. Richter-Menge, D. Ringelberg, M. Reynolds, D.T. Ho and T. Takahashi, Gas diffusion through columnar laboratory sea ice: Implications for transport of biogenic gases, submitted to *J. Glaciol.*.

Richter-Menge, J.A., and others, 2011, The Arctic (in "State of the Climate in 2010"). *Bull. Amer. Meteor. Soc.*, 92, S148-S150.

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Perovich, D.K., B. Light, K.F. Jones, H. Eicken, J. Stroeve, and T. Markus, Solar partitioning in a changing Arctic sea ice cover, *Ann Glaciol.*, 52, 192-196, 2011.

Polashenski, C., D.K. Perovich, J.A. Richter-Menge, B. Elder, Autonomous observations of sea ice mass balance in seasonal ice, *Ann Glaciol.*, 52, 18-26, 2011.

Haas, C., H. LeGoff, S. Audrain, D. Perovich, and J. Haapala, Local and floe-scale seasonal thickness changes in the Transpolar Drift, *Ann Glaciol.*,52, 97-102, 2011.

Flanner, M.G., K.M. Shell, M. Barlage, D.K. Perovich, M.A. Tschudi, Northern hemisphere cryosphere radiative forcing and albedo feedback during 1979 – 2008, *Nature Geosciences*, 10.1038/NGEO1062, 2011.

Toole, J. M., M.L. Timmermans, D. K. Perovich, R. A. Krishfield, A. Proshutinsky, and J. A. Richter-Menge (2010), Influences of the ocean surface mixed layer and thermohaline stratification on Arctic Sea ice in the central Canada Basin, *J. Geophy. Res.*., 115, C10018, doi:10.1029/2009JC005660.

Polyakov, I.V., L.A. Timkhov, V.A. Alexeev, S. Bacon, I.A. Dmitrenko, L. Fortier, I.E. Frolov, J.C. Gascard, E. Hanson, V.V. Ivanov, S. Laxon, C. Mauritzen, D.K. Perovich, K. Shimada, H.L. Simmons, V.T. Sokolov, M. Steele, and J. Toole (2010), Arctic Ocean warming contributes to reduced polar ice cap, *Journal of Physical Oceanography*, doi:10.1175/2010JPO4339.1.

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