

CURRICULUM VITAE

Dale Paul Winebrenner

Education: Ph.D. in Electrical Engineering, 1985, University of Washington
M.S. in Electrical Engineering (Applied Physics), 1980, University of California,
San Diego
B.S. (with Highest Distinction) in Physics, 1979, Purdue University

Positions:

- 2009 – present Affiliated Faculty, Astrobiology Program, University of Washington, Seattle,
Washington, USA
- 2005 – present Research Professor, Department of Earth and Space
Sciences, and Adjunct Research Professor, Department of Electrical Engineering,
University of Washington, Seattle, Washington, USA
- 2004 – present Principal Physicist, Applied Physics Laboratory,
University of Washington, Seattle, Washington, USA
- 2003 – 2005 Adjunct Research Professor, Department of Earth and Space
Sciences, University of Washington, Seattle, Washington, USA
- 2003 – 2005 Research Professor, Department of Electrical Engineering,
University of Washington; Seattle, Washington, USA
- 2001 – 2003 Adjunct Research Associate Professor, Department of Earth and Space
Sciences, University of Washington, Seattle, Washington, USA
- 1994 – 2003 Research Associate Professor, Department of Electrical Engineering,
University of Washington; Seattle, Washington, USA
- 1991 - 2004 Senior Research Scientist, Applied Physics Laboratory, University of
Washington; Seattle, Washington, USA
- 1995 - 1996 Academic Visitor, Mullard Space Sciences Laboratory, University College
London; London, UK
- 1986 - 1994 Research Assistant Professor, Department of Electrical Engineering,
University of Washington; Seattle, Washington, USA
- 1986 - 1991 Research Scientist, Applied Physics Laboratory,
University of Washington; Seattle, Washington, USA
- 1985 - 1986 Post-doctoral Fellow, Max-Planck-Institut fuer Meteorologie; Hamburg,
Federal Republic of Germany
- 1980 - 1985 Research Assistant, Applied Physics Laboratory, University of
Washington; Seattle, Washington, USA

Honors and Awards:

Sigma Xi
Regents Fellow, University of California, San Diego, 1979-1980
International Union of Radio Science Young Scientist Award, 1987
Senior Member, Institute of Electrical and Electronics Engineers

Professional Societies:

American Physical Society
International Glaciological Society
American Geophysical Union
Optical Society of America
Institute of Electrical and Electronic Engineers
Commissions B and F, International Union of Radio Science

University, Professional and National Service:

Member, Planetary Sciences Faculty Search Committee, Department of Earth and Space Sciences, University of Washington, 2020-2021

Member, Astrobiology Admissions Committee, University of Washington, 2018-2019, 2019-2020

Royalty Research Fund Review Panel, 2018-2019, 2019-2020

Member, Promotion Review Panel (Michelle Koutnik), Department of Earth and Space Sciences, University of Washington, 2019

Member, Promotion Review Panel (Rory Barnes), Astrobiology Program/Department of Astronomy, University of Washington, 2019

Member, Promotion Review Panel (Stephen Wood), Department of Earth and Space Sciences, University of Washington, 2016

Member, Glaciology Faculty Search Committee, Department of Earth and Space Sciences, University of Washington, 2014

Member, Astrobiology Steering Group, University of Washington, 2013-present

Member, Promotion Review Panel (Joshua Bandfield), Department of Earth and Space Sciences, University of Washington, 2011.

Faculty, Woods Hole Oceanographic Institution Geophysical Fluid Dynamics Summer School, August 2006

Co-Lead, Sub-Surface Science and Radar Sounding Group of the Jupiter Icy Moons Orbiter Science Definition Team, June 2003- 2005

Co-Convenor, Union Special Session on “Remote Detection of the Ingredients for Life” at the 2002 Fall Meeting of the American Geophysical Union

Co-Chair, Technical Program Committee, 1998 International Geoscience and Remote Sensing Symposium

Alternate Representative for Applied Physics Laboratory, College of Ocean and Fishery Sciences College Council, 1997-2008

Session Chair, International Geoscience and Remote Sensing Symposia, 1989, 1990, 1992, 1994, 1998

Member, Organizing Committee, 1997 Workshop on the Remote Sensing of Planetary Ices

Member, Technical Committee, 1997 International Geoscience and Remote Sensing Symposium

Member, Organizing Committee, IEEE Antennas and Propagation Society Meeting, 1994

Member, Organizing Committee, Scintillation Conference, 1992

Host, Planning Workshop for Office of Naval Research Accelerated Research Initiative on Sea Ice Electromagnetics, 1991

Review Panels and Reviews:

Member, NASA Mars Data Analysis Program Review Panel, 2010

Chair, Radar Subpanel of NASA High Capacity Instruments for Planetary Exploration Review Panel, 2004

Member, NASA Mission to Planet Earth Review Panels, 1995 and 1996

Member, NASA Topographic Satellite Announcement of Opportunity Proposal Review Panel, 1994

Reviewer, proposals to the NASA Planetary and Earth Science Programs, the NSF Office of Polar Programs, and The Royal Society (UK), 1990 - present

Reviewer, *Science*, *Journal of Glaciology*, *the University of Arizona Space Science Series*, *Physical Review B*, *Astrobiology*, *Optics Express*, *IEEE Transactions on Geoscience and Remote Sensing*, *Radio Science*, *Journal of the Optical Society of America*, *Applied Optics*, *Journal of Geophysical Research*, *Atmospheric Chemistry and Physics*, and others, 1985 - present

Editorships and Editorial Board Memberships:

Guest Editor, with Y. Kuga, 1998 International Geoscience and Remote Sensing Symposium special issue of the IEEE Transactions on Geoscience and Remote Sensing

Member, Editorial Board, American Geophysical Union Monograph on the Microwave Remote Sensing of Sea Ice, 1991 - 1992.

Field Experience:

Field Trials of Applied Physics Laboratory Ice Diver thermal ice melt probe, Easton Glacier, Mt. Baker (Washington state), 2019, Greenland ablation zone, 2013 and 2014

Program on Regional Arctic Climate Assessment Expedition, Greenland Summit, 1998

Electromagnetic Properties of Sea Ice Experiment, Barrow, AK, 1994

Cold Regions Research and Engineering Laboratory Joint Experiments, Hanover, NH, 1988 -1994

Committee Chair for Students Granted Advanced Degrees (Completed):

Paul M.S. Kintner, M.S., University of Washington, 2017

Joseph A. MacGregor, Ph.D., University of Washington, 2008

Indranil Chowdhury, M.S.E.E., University of Washington, 2004

Ian Joughin, Ph.D., University of Washington, 1995

Eric Nelson, M.S.E.E., University of Washington, 1993

Supervisory Committee Memberships:

Margot Shaya, Ph.D., University of Washington, current

Benjamin Hills, Ph.D., University of Washington, current

Alex Huth, Ph.D., University of Washington, 2020

Huazeng Deng, Ph.D., University of Washington, 2018

Shadi Aslebagh, (Graduate School Representative), Ph.D., Univ. of Washington, 2018

Patricia Carroll, (Graduate School Representative), Ph.D., Univ. of Washington, 2016

Xin Chang, Ph.D., University of Washington, 2015

Adam Campbell, Ph.D., University of Washington, 2015

Jeff Bowman (Graduate School Representative), Ph.D., University of Washington, 2014

Iryna Danilina, Ph.D., University of Washington, 2012

M. Hassan Arbab, Ph.D., University of Washington, 2012

Xiaolan Xu, Ph.D., University of Washington, 2011

Eric Collins (Graduate School Representative), Ph.D., University of Washington, 2009

Michelle Koutnik, Ph.D., University of Washington, 2009

Lora Koenig, Ph.D., University of Washington, 2008

Melissa Meyer, Ph.D., University of Washington, 2006

David Schneider, Ph.D., University of Washington, 2005

Ben Smith, Ph.D., University of Washington, 2005

Robert Hawley, Ph.D., University of Washington, 2004

John Moe, Ph.D., University of Washington, 1996

Lisa Zurk, Ph.D., University of Washington, 1996

Lynn Sengers, Ph.D., University of Washington, 1996

Anders Carlstrom, Ph.D., Chalmers University of Technology, Gothenborg, Sweden, 1995

Mark Wensnahan, Ph.D., University of Washington, 1995

Richard West, Ph.D., University of Washington, 1995

Undergraduate Research Supervisor:

Nolan Flannery, 2019-2021
Marissa Karpak
Samantha Larson
Britney Dodson
Ross Olason
Patrick Ma
Ryan Knott, 2009-2010
Ben King, 2009-2011

Postdoctoral Supervisor:

Hassan Arbab
Robert Arthern

Research Grants and Contracts:

COLDEX
SESAME
DARPA
COLDTech
NSF OPP Antarctic Instrumentation

Patents:

US Patent Number 9295402, issued March 29, 2016, Entitled: "METHODS AND SYSTEMS FOR ASSESSING A BURN INJURY", Inventors: Mohammad Arbab, Pierre Mourad, Antao Chen, Trevor Dickey, Matthew Klein, Dale Winebrenner

US Patent Number 9261456, issued 16 February 2016, Entitled: "TERAHERTZ SPECTROSCOPY OF ROUGH SURFACE TARGETS", **Inventors:** Mohammad Arbab, Antao Chen, Eric Thorsos, Dale Winebrenner

Peer-Reviewed Publications:

Winebrenner, D.P., and A. Ishimaru, "Investigation of a surface field phase perturbation technique for scattering from rough surfaces," *Radio Science* **20**(2), pp. 161-170, 1985.

Winebrenner, D.P., and A. Ishimaru, "Application of the phase-perturbation technique to randomly rough surfaces," *Journal of the Optical Society of America (A)* **2**(12), pp. 2285-2294, 1985.

Jackson, D.R., D.P. Winebrenner, and A. Ishimaru, "Application of the composite Roughness model to high-frequency bottom backscattering," *Journal of the Acoustical Society of America* **79**(5), pp. 1410-1422, 1986.

Winebrenner, D.P., and A. Ishimaru, "On the far-field approximation for scattering from randomly rough surfaces," *IEEE Transactions on Antennas and Propagation* **AP-34**(6), pp. 847-849, 1986.

Jackson, D.R., D.P. Winebrenner, and A. Ishimaru, "Comparison of perturbation theories for rough-surface scattering," *Journal of the Acoustical Society of America* **83**(3), pp. 961-969, 1988.

- Winebrenner, D.P., and K. Hasselmann, "Specular point scattering contribution to the mean SAR image of the ocean surface," *Journal of Geophysical Research* **93**(C8), pp. 9281-9294, 1988.
- Winebrenner, D.P., L. Tsang, and B. Wen, "Sea ice characterization measurements needed for testing of microwave remote sensing models," *IEEE Journal of Oceanic Engineering* **14**(2), pp. 149-158, 1989.
- Wen, B., L. Tsang, D.P. Winebrenner, and A. Ishimaru, "Dense medium radiative transfer theory: Comparison with experiment and applications to microwave remote and sensing and polarimetry," *IEEE Transactions on Geoscience and Remote Sensing* **28**(1), pp. 46-59, 1990.
- Thorsos, E.I., and D.P. Winebrenner, "An examination of the 'Full-wave' method for rough surface scattering in the case of small roughness," *Journal of Geophysical Research* **96**(C9), pp. 17,107-17,121, 1991.
- Drinkwater, M.R., R. Kwok, D.P. Winebrenner, and E. Rignot, "Multi-frequency polarimetric SAR observations of sea ice," *Journal of Geophysical Research* **96**(C11), pp. 20,679-20,698, 1991.
- Winebrenner, D.P., J. Bredow, M.R. Drinkwater, A.K. Fung, A.J. Gow, T.C. Grenfell, H.C. Han, J.A. Kong, J.K. Lee, S. Mudaliar, S. Nghiem, R.G. Onstott, D.K. Perovich, L. Tsang, and R.D. West, "Microwave sea ice signature modeling," in *Microwave Remote Sensing of Sea Ice*, F. Carsey, ed., American Geophysical Union, 1992.
- Hallikainen, M., and D.P. Winebrenner, "The physical basis for sea ice remote sensing," in *Microwave Remote Sensing of Sea Ice*, F. Carsey, ed., American Geophysical Union, 1992.
- Grenfell, T.C., D.J. Cavalieri, J.C. Comiso, M.R. Drinkwater, R.G. Onstott, I. Rubinstein, K. Steffen, and D.P. Winebrenner, "Microwave signatures of new and young sea ice," in *Microwave Remote Sensing of Sea Ice*, F. Carsey, ed., American Geophysical Union, 1992.
- M.R. Drinkwater, H. Israelson, R. Kwok, R.G. Onstott, and D.P. Winebrenner, "Potential applications of polarimetry to the classification of sea ice," in *Microwave Remote Sensing of Sea Ice*, F. Carsey, ed., American Geophysical Union, 1992.
- West, R., L. Tsang, and D.P. Winebrenner, "Dense medium radiative transfer theory for two scattering layers with a Rayleigh distribution of particle sizes," *IEEE Transactions on Geoscience and Remote Sensing* **31**(2), pp. 426-437, 1993.
- Wensnahan, M., T.C. Grenfell, D.P. Winebrenner, and G.A. Maykut, "Observations and theoretical studies of microwave emission from thin saline ice," *Journal of Geophysical Research* **98**(C5), pp. 8531-8546, 1993.
- Wensnahan, M., G.A. Maykut, T.C. Grenfell, and D.P. Winebrenner, "Passive microwave remote sensing of thin sea ice using principal component analysis," *Journal of Geophysical Research* **98**(C7), pp. 12,453-12,468, 1993.

- Joughin, I.R., D.B. Percival, and D.P. Winebrenner, "Maximum likelihood estimation of K distribution parameters for SAR data," *IEEE Transactions on Geoscience and Remote Sensing* **31**(5), pp. 989-999, 1993.
- Grenfell, T.C., M.R. Wensnahan, and D.P. Winebrenner, "Passive microwave signatures of simulated pancake ice and young pressure ridges," *Remote Sensing Reviews* **9**, pp. 51-64, 1994.
- Joughin, I.R., D.P. Winebrenner, and D.B. Percival, "Probability density functions for multi-look polarimetric signatures," *IEEE Transactions on Geoscience and Remote Sensing* **32**(3), pp. 562-574, 1994.
- Ishimaru, A., L. Ailes-Sengers, P. Phu, and D. Winebrenner, "Pulse broadening and two-frequency mutual coherence function of the scattered wave from rough surfaces," *Waves in Random Media* **4**, pp. 139-148, 1994.
- Ishimaru, A., L. Ailes-Sengers, P. Phu and D. Winebrenner, "Pulse broadening of enhanced backscattering from rough surfaces," *Waves in Random Media* **4**, pp. 453-465, 1994.
- Winebrenner, D.P., E.D. Nelson, R. Colony, and R.D. West, "Observation of melt onset on multiyear Arctic sea ice using the ERS-1 synthetic aperture radar," *Journal of Geophysical Research* **99**(C11), pp. 22,425-22,441, 1994.
- Winebrenner, D.P., L.D. Farmer, and I.R. Joughin, "On the response of polarimetric SAR signatures at 24-cm wavelength to sea ice thickness in Arctic leads," *Radio Science* **30**(2), pp. 373-402, 1995.
- Joughin, I.R., D.P. Winebrenner, and M.A. Fahnestock, "Observations of ice sheet motion in Greenland using satellite radar interferometry," *Geophysical Research Letters* **22**(5), pp. 571-574, 1995.
- Zurk, L.M., L. Tsang, K.H. Ding, and D.P. Winebrenner, "Monte Carlo simulations of the extinction rate of densely packed spheres with clustered and non-clustered geometries," *Journal of the Optical Society of America (A)* **12**(8), pp. 1772-1781, 1995.
- Tsang, L., D.T. Davis, R. West, Z. Chen, J.-N. Hwang, and D.P. Winebrenner, "Passive microwave remote sensing of snow: volume scattering in snow and parametric inversion of snow parameters with an artificial neural network", in *Passive Microwave Remote Sensing of Land-Atmosphere Interactions*, B.J. Choudhury, Y.H. Kerr, E.G. Njoku, and P. Pampaloni, VSP, Utrecht, The Netherlands, 1995.
- West, R.D., D.P. Winebrenner, L. Tsang, and H. Rott, "Microwave emission from density-stratified Antarctic firn at 6 cm wavelength," *Journal of Glaciology* **42**(140), pp. 63-76, 1996.
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- Winebrenner, D.P., B. Holt, and E.D. Nelson, "Observation of Autumn freeze-up in the Beaufort Sea using the ERS-1 synthetic aperture radar," *Journal of Geophysical Research* **101**(C7), pp. 16,401-16,419, 1996.
- Zurk, L.M., L. Tsang, and D.P. Winebrenner, "Scattering properties of dense media from Monte Carlo simulations with application to active remote sensing of snow", *Radio Science* **31**(4), pp. 803-819, 1996.
- Winebrenner, D.P., D.G. Long, and B. Holt, "Mapping the progression of melt onset and freeze-up on Arctic sea ice using SAR and scatterometry," in *Analysis of SAR Data of the Polar Oceans*, C. Tsatsoulis and R. Kwok, eds., Springer Verlag, 1998.
- Sylvester, J., and D.P. Winebrenner, "Linear and nonlinear inverse scattering", *SIAM Journal of Applied Mathematics* **59**(2), pp. 669-699, 1998.
- Golden, K.M., M. Cheney, K.-H. Ding, A.K. Fung, T.C. Grenfell, D. Isaacson, J.A. Kong, S.V. Nghiem, J. Sylvester, and D.P. Winebrenner, "Forward electromagnetic models for sea ice," *IEEE Transactions on Geoscience and Remote Sensing* **36**(5), pp. 1655-1674, 1998.
- Golden, K.M., D. Borup, M. Cheney, E. Cherkaeva, M.S. Dawson, K.-H. Ding, A.K. Fung, D. Isaacson, S.A. Johnson, A.K. Jordan, J.A. Kong, R. Kwok, S.V. Nghiem, R.G. Onstott, J. Sylvester, D.P. Winebrenner, and I.H. Zabel, "Inverse electromagnetic models for sea ice," *IEEE Transactions on Geoscience and Remote Sensing* **36**(5), pp. 1675-1704, 1998.
- R. Kwok, S.V. Nghiem, S. Martin, D.P. Winebrenner, A.J. Gow, D.K. Perovich, C.T. Swift, D.G. Barber, K.M. Golden, and E.J. Knapp, "Laboratory measurements of sea ice: Connections to microwave remote sensing," *IEEE Transactions on Geoscience and Remote Sensing* **36**(5), pp. 1716-1730, 1998.
- Barabanenkov, Yu.N., M.Yu. Barabanenkov, and D.P. Winebrenner, "Effect of pulse entrapping on diffuse reflection from a resonant random medium: Exact solution to the scalar albedo problem," *Waves in Random Media* **8**, pp. 451-463, 1998.
- Morse, D.L., E.D. Waddington, H.-P. Marshall, T.A. Neumann, E.J. Steig, J.E. Dibb, D.P. Winebrenner, and R.J. Arthern, "Accumulation rate measurements at Taylor Dome, East Antarctica: Techniques and strategies for mass balance measurements in polar environments", *Geografiska Annaler* **81** A, pp. 683-694, 1999.
- Arthern, R.J., D.P. Winebrenner, and E.D. Waddington, "Densification of water ice deposits on the residual north polar cap of Mars", *Icarus* **144**, pp. 367-381, 2000.
- Fahnestock, M.A., T.A. Scambos, C.A. Shuman, R.J. Arthern, D.P. Winebrenner, and R. Kwok, "Snow megadune fields on the East Antarctic Plateau: extreme atmosphere-ice interaction", *Geophysical Research Letters* **27**(22), pp. 3719-3722, 2000.

- Winebrenner, D.P., R.J. Arthern, and C.A. Shuman, "Mapping Greenland accumulation rates using observations of thermal emission at 4.5 cm wavelength", *Journal of Geophysical Research* **106**(D24), pp. 33,919-33,934, 2001.
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- Winebrenner, D.P., B. Smith, G. Catania, C.F. Raymond, and H. Conway, "Radio-frequency attenuation beneath Siple Dome, West Antarctica from wide-angle and profiling radar observations", *Annals of Glaciology* **37**, 226-232, 2003.
- Winebrenner, D.P., E.J. Steig, and D.P. Schneider, "Temporal Co-Variation of Surface and Microwave Brightness Temperatures in Antarctica, with Implications for the Observation of Surface Temperature Variability Using Satellite Data", *Annals of Glaciology*, **39**, 346-350, 2004.
- Karlöf, L., D.P. Winebrenner, and D.B. Percival, "How representative is a time-series derived from an ice core? Exemplified by a study at a low-accumulation site on the Antarctic Plateau", *Journal of Geophysical Research*, **111** F04001, doi:10.1029/2006JF000552, 2006.
- Arthern, R.J., D.P. Winebrenner, and D.G. Vaughan, "Antarctic snow accumulation mapped using polarization of 4.3-cm wavelength microwave emission", *Journal of Geophysical Research* **111** D06107, doi:10.1029/2004JD005667, 2006.
- MacGregor, J.A., D.P. Winebrenner, H. Conway, K. Matsuoka, P.A. Mayewski, and G.D. Clow, "Modeling englacial radar attenuation at Siple Dome, West Antarctica using ice chemistry and temperature data", *Journal of Geophysical Research* **112** F03008, doi:10.1029/2006JF000717, 2007.
- Koenig, L.S., E.J. Steig, D.P. Winebrenner, and C.A. Shuman, "A link between microwave extinction length, firn thermal diffusivity, and accumulation rate in West Antarctica", *Journal of Geophysical Research* **112**, F03018, doi:10.1029/2006JF000716, 2007.
- Zurk, L.M., B. Orłowski, D.P. Winebrenner, E.I. Thorsos, M.R. Leahy-Hoppa, and L.M. Hayden, "Terahertz scattering from granular material", *Journal of the Optical Society of America B* **24**(9), pp. 2238-2243, 2007.
- Winebrenner, D.P., M.R. Koutnik, E.D. Waddington, A.V. Pathare, B.C. Murray, S. Byrne, and J.L. Bamber, "Evidence for ice flow prior to trough formation in the Martian North Polar Layered Deposits", *Icarus* **195**, 90-105, 2008.
- MacGregor, J.A., K. Matsuoka, M.R. Koutnik, E.D. Waddington, M. Studinger, and D.P. Winebrenner, "Mapping millennially averaged accumulation rates for the Lake Vostok region using deep internal layers and inverse methods", *Annals of Glaciology* **50**(51), 25-34, 2009.
- Koutnik, M.R., E.D. Waddington, and D.P. Winebrenner, "A method to infer past surface mass balance and topography from internal layers in Martian polar layered deposits", *Icarus* **204**, 458-470, 2009.

- Arbab, M.H., D.P. Winebrenner, E.I Thoros and A. Chen, “Retrieval of Terahertz Spectroscopic Signatures in the Presence of Rough Surface Scattering Using Wavelet Methods”, *Appl. Phys. Lett.* **97**, 181903, 2010.
- Arbab, M.H., T.C. Dickey, D.P. Winebrenner, A. Chen, M.B. Klein, and P.D. Mourad “Terahertz reflectometry of burn wounds in rat skin”, *Biomedical Optics Express* **2**(8), 2339-2347, 2011.
- MacGregor, J.A., S. Anandkrishnan, G.A. Catania and D.P. Winebrenner, “The grounding zone of the Ross Ice Shelf, West Antarctica, from ice-penetrating radar”, *Journal of Glaciology* **57**(205), 917-928, 2011.
- MacGregor, J.A., K. Matsuoka, E.D. Waddington, D.P. Winebrenner, and F. Pattyn, “Spatial variation of englacial radar attenuation: Modeling approach and application to the Vostok flowline”, *Journal of Geophysical Research* **117**, F03022, doi:10.1029/2011F002327, 2012.
- Koutnik, M.R., E.D. Waddington, D.P. Winebrenner, and A.V. Pathare, “Response timescales for Martian ice masses and implications for ice flow on Mars”, *Icarus* **225**, 949-959, 2013.
- Arbab, M.H., D.P. Winebrenner, T.C. Dickey, A. Chen, M.B. Klein, and P.D. Mourad, “Terahertz spectroscopy for assessment of burn injuries *in vivo*”, *J. Biomed. Opt.* **18** (7), 077004, doi: 10.1117/1.JBO.18.7.077004, 2013.
- Winebrenner, D. P., Kintner, P. M. S., & MacGregor, J. A., “New estimates of ice and oxygen fluxes across the entire lid of Lake Vostok from observations of englacial radio wave attenuation”, *Journal of Geophysical Research: Earth Surface* **124**, 795–811. <https://doi.org/10.1029/2018JF004692>, 2019.
- Xu, K., E. Bayati, K. Oguchi, S. Watanabe, D.P. Winebrenner, and M.H. Arbab, “Terahertz time-domain polarimetry (THz-TDP) based n spinning E-O sampling technique: determination of precision and calibration”, *Optics Express* **28**(9), 13482-13496, 2020.
- Kahni, M.E., D.P. Winebrenner, and M.H. Arbab, “Phase function effects on identification of terahertz spectral signatures using the Discrete Wavelet Transform”, *IEEE Transactions on Terahertz Science and Technology* **10**(6), 656-666, 2020.
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- Hoehler, T.M., J.S Bowman, K.L. Craft, P. Willis, and D.P. Winebrenner, “Leveraging Earth Hydrosphere Science in the Search for Life on Ocean Worlds”, *Oceanography* **35**(1), 23-29, 2022.
- Glass, J.B., H.M. Dierssen, C.R. Glein, B.E. Schmidt, and D.P. Winebrenner, “Defining and characterizing habitable environments in ocean world systems”, *Oceanography* **35**(1), 30-38, 2022.

Chirayath, V., E Bagshaw, K. Craft, H. Dierssen, D. Kline, D. Lim, M. Malaska, O. Pizaro, S. Purkis, D. Schroeder, P. Sabron, S. Waller, and D. Winebrenner, “Oceans across the solar system and the search for extraoceanic life”, *Oceanography Oceanography* **35**(1), 42-53, 2022.

Schuler, C.G., D.P. Winebrenner, W.T. Elam, J. Burnett, B. Boles, and J.A. Mikucki, “Microbial transport by a descending ice melting probe; Implications for subglacial and ocean world exploration”, to appear in *Astrobiology*, 2023.

do Vale Pereira, P., M.J. Durka, B.P. Hogan, K. Richmond, M.W.E. Smith, D.P. Winebrenner, W.T. Elam, B.J. Hockman, A. Lopez, N. Tanner, J. Moore, J. Ralston, M. Alexander, W. Zimmerman, N. Flannery, W. Kuhl, K.L. Cahoy, T.A. Cwik, and W.C. Stone, “Experimental validation of a cryobot thermal models for the exploration of ocean worlds”, to appear in *Planetary Science Journal*, 2023.

Winebrenner, D.P., and W.T. Elam, “A thermal melt probe system for extensive, low-cost instrument deployment within and beneath ice sheets” in preparation for submission to the *Journal of Glaciology*, 2022.

Winebrenner, D.P., S. Carpenter, W.T. Elam, M. Karpack, S. Larson, R. Wicks, and K. Junge, “Ultraviolet susceptibilities of cold-adapted microbes in water and water ice”, in preparation for submission to *Astrobiology*, 2022.

Dissertation:

“A Surface Field Phase Perturbation Method for Scattering from Rough Surfaces,”
University of Washington, 1985.