

## CURRICULUM VITAE

### **William Scott Pegau**

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### EDUCATION:

B.S.	University of Alaska Fairbanks (Physics, honors)	1990
Ph.D.	Oregon State University (Oceanography)	1996

### EXPERIENCE:

Electricians Mate, US Navy (submarines)	1979-1985
Research Assistant, University of Alaska (Dr. Knut Stamnes)	1987-1990
Graduate Research Assistant, Oregon State University (Dr. J. Ronald V. Zaneveld)	1990-1996
Research Associate (Post Doc.), Oregon State University	1996-1997
Research Associate, Oregon State University	1997-1998
Assistant Professor, Oregon State University	1998-2002
Research Assistant Professor, Oregon State University	2002-2010
Senior Scientist, Kachemak Bay Research Reserve	2002-2003
Research Coordinator, Kachemak Bay National Estuarine Research Reserve	2003-2007
Research Program Manager, Oil Spill Recovery Institute	2007-present

### RESEARCH INTERESTS:

To develop novel oil spill detection and tracking approaches. Understanding the fate and behavior of oil spilled in cold water environments. Development of response options for oceans with sea ice present. Circulation in Prince William Sound, Cook Inlet and the Gulf of Alaska, and the associated larval transport. Relationship between oceanographic conditions and fisheries. Application of remote sensing for understanding coastal processes.

### PUBLICATIONS:

Wijesekera, H. W., D. W. Wang, E. Jarosz, W. J. Teague, J. N. Moum, and W. S. Pegau, Turbulent large-eddy momentum flux divergence during high winds events, in press *Journal of Physical Oceanography*

Jarosz, E., D. Wang, H. Wijesekera, W.S. Pegau, and J.N. Moum. 2017. Flow Variability within the Alaska Coastal Current in winter. In press. *Journal of Geophysical Research*. DOI 10.1002/2016JC012102

Batten, S.D., S. Moffitt, W.S. Pegau, and R. Campbell. 2016. Plankton indices explain interannual variability in Prince William Sound herring first year growth, *Fisheries Oceanography*, **25**, 420-432.

Wang, D. W., H. W. Wijesekera, E. Jarosz, W. J. Teague, and W. S. Pegau. 2016. Turbulent diffusivity under high winds from acoustic measurements of bubbles, *Journal of Physical Oceanography*, **46**, 1593-1613. Doi 10.1175/JPO-D-15-0164.1

Wilkinson, J. P., T. Boyd, B. Hagen, T. Maksym, S. Pegau, C. Roman, H Singh, and L. Zabilansky, 2015. Detection and quantification of oil under sea ice: the view from below, *Cold Regions Science and Technology*, **109**, 9-17.

Conmy, R. N., P. G. Coble, J. Farr, A. M. Wood, K. Lee, S. Pegau, I Walsh, C. Koch, M. I. Abercrombie, M. S. Miles, M. R. Lewis, S. Ryan, B. Robinson, T. King, and J. Lacoste, 2014. Performance of submersible optical sensors exposed to chemically-dispersed crude oil: wave tank simulations for improved oil spill monitoring. *Environ. Sci. Technol*, **48**, 1803-1810.

Halverson, M.J., J.C. Ohlmann, M.A. Johnson, W.S. Pegau, 2013. Disruption of a cyclonic eddy circulation by wind stress in Prince William Sound, Alaska, *Cont. Shelf Res.*, **63**, S13-S25.

Musgrave, D.L., M.J. Halverson, and W.S. Pegau, 2012. Seasonal Surface Circulation, Temperature, and Salinity in Prince William Sound, Alaska, *Cont. Shelf Res.*, **53**, 20-29. doi:10.1016/j.csr.2012.12.001.

Dickey, T. D., M.-C. Albuossiere, M. Banner, P. Bhandari, T. Boyd, L. Carvalho, G. Chang, Y. Chao, M. Cimono, H. Czerski, M. Darecki, C. Dong, D. Farmer, E. Firing, S. Freeman, J. Gemmrich, P. Gernez, , N. Hall-Patch, B. Holt, J. Hummon, S. Jiang, C. Jones, G. Kattawar, D. LeBel, L. Lenain, M. Lewis, Y. Liu, L. Logan, D. Manov, K. Melville, M.A. Moline, R. Morison, F. Nencioli, S. Pegau, B. Reineman, I. Robbins, R. Röttgers, H. Schultz, D. Siegel, L. Shen, M. Shinki, M. Slivkoff, M. Sokólski, P. Sutherland, F. Spada, N. Statom, D. Stramski, M. Twardowski, S. Vagle, R. Van Dommelen, K. Voss, L. Washburn, J. Wei, H. Wijesekera, D. Yang, O. Wurl, S. Yildiz, Y. You, D. Yue, R. Zaneveld, and C. Zappa, 2012. Recent advances in the study of optical variability in the near-surface and upper ocean, *J. Geophys. Res.*, **117**, doi 10.1029/2012JC007964.

Moline, M.A., I. Robbins, B. Zelenke, W.S. Pegau, and H. Wijesekera, 2012. Evaluation of bio-optical inversion of spectral irradiance measured from an autonomous underwater vehicle, *J. Geophys. Res.*, **117**, 12pp, doi:10.1029/2001JC007352.

Streever, B., R. Suydam, J.F. Payne, R. Shuchman, R.P. Angliss, G. Balogh, J. Brown, J. Grunblatt, S. Guyer, D.L. Kane, J.J. Kelley, G. Kofinas, D.R. Lassuy, W. Loya, P. Martin, S.E. Moore, W.S. Pegau, C. Rea, D.J. Reed, T. Sformo, M. Sturm, J.J. Taylor, T. Viavant, D. Williams, and D. Yokel, 2011. Environmental Change and Potential Impacts: Applied Research Priorities for Alaska's North Slope, *Arctic*, **64**, 390-397.

Whitmire, A.L., W.S. Pegau, L. Karp-Boss, E. Boss, and T.J. Cowles, 2010. Spectral backscattering properties of marine phytoplankton cultures, *Optics Express*, **18**, 15073-15093.

Whitmire, A.L., E. Boss, T.J. Cowles, and W.S. Pegau, 2007. Spectral variability of the particulate backscattering ratio, *Optics Express*, **15**, 7019-7031.

Boss, E., R. Collier, G. Larson, K. Fennel, and W. S. Pegau, 2007. Measurements of spectral optical properties and their relation to biogeochemical variables and processes in Crater Lake National Park, OR. *Hydrobiologia*, DOI 10.1007/s10750-006-2609-3.

Montes-Hugo, M. A., K. Carder, R. J. Foy, J. Cannizzaro, E. Brown, and S. Pegau, 2005. Estimating phytoplankton biomass in coastal waters of Alaska using airborne remote sensing, *Remote Sens. Environ.*, **98**, 481-493.

- Wijesekera, H. W., W. S. Pegau, and T. J. Boyd, 2005. The effect of surface waves on the irradiance distribution in the upper ocean, *Optics Express*, **23**, 9267-9264.
- Wijesekera, H. W., D. L. Rudnick, C. A. Paulson, S. D. Pierce, W. S. Pegau, J. Mickett, and M. C. Gregg, 2005. Upper ocean heat and freshwater budgets in the eastern Pacific warm pool, *J. Geophys. Res.*, **110**, DOI:10.1029/2004JC002511.
- Skyllingstad, E. D., C. A. Paulson, and W. S. Pegau, 2005. Simulation of turbulent exchange processes in summertime leads, *J. Geophys. Res.*, **110**, doi:10.1029/2004JC002502.
- Boss, E., D. Stramski, T. Bergmann, W. S. Pegau, and M. Lewis, 2004. Why should we measure optical backscattering, *Oceanography*, June.
- Boss, E., W. S. Pegau, M. Lee, M. Twardowski, E. Shybanov, G. Korotaev, and F. Baratange, 2004. The particulate backscattering ratio at LEO 15 and its use to study particle composition and distribution, *J. Geophys. Res.*, **109**, C01014, DOI:10.1029/2002JC001514.
- Stamnes, K., W. Li, B. Yan, H. Eide, A. Barnard, W.S. Pegau, and J.J. Stamnes. 2003. Accurate and self-consistent ocean color algorithm: Simultaneous retrieval of aerosol optical properties and chlorophyll concentrations. *Appl. Opt.* **42**, 939-951.
- Skyllingstad E. D., C. A. Paulson, W. S. Pegau, M. G. McPhee, T. Stanton, 2003. Effects of keels on ice bottom turbulence exchange, *J. Geophys. Res.*, **108**, 3372.
- Simeon, J., C. S. Roesler, W. S. Pegau, and C. Dupouy. 2003. Sources of spatial variations in light absorbing components along an equatorial transect from 165°E to 150°W. *J. Geophys. Res.* **108**, doi:10.1029/2002JC001613, 3333.
- Zaneveld, J. R. V., and W. S. Pegau, 2003. A robust underwater visibility parameter, *Opt. Expr.*, **11**, 2997-3009.
- Chang G. C., T. D. Dickey, E. Boss, C. D. Mobley, and W. S. Pegau, 2003. Towards closure of upwelling radiance in coastal waters, *Appl. Opt.*, **42**, 1574-1582.
- Chang G. C., T. D. Dickey, O. M. Schofield, A. D. Weidemann, E. Boss, W. S. Pegau, M. A. Moline, and S. M. Glenn, 2002. Nearshore physical forcing of bio-optical properties in the New York Bight. *J. Geophys. Res.*, **107**, 10.1029/2001JC001018.
- Pegau, W. S., E. Boss, and A. Martinez, 2002. Ocean color observations of eddies during the summer in the Gulf of California, *Geophys. Res. Lett.*, **29**, 10.1029/2001GL014076.
- Pegau, W. Scott, 2002. Inherent optical properties of the central Arctic surface waters, *J. Geophys Res.* **107**, doi. 10.1029/2000JC000382.
- Uttal, T., J. A. Curry, M. G. McPhee, D. K. Perovich, R. E. Moritz, J. Maslanik, P. S. Guest, H. Stern, J. Moore, R. Turenee, A. Heiberg, M. Serreze, D. Wylie, P. O. G. Persson, C. A. Paulson, C. Halle, J. Morison, P. Wheeler, A. Makshtas, H. Welch, M. D. Shupe, J. M. Intrieri, K. Stamnes, R. W. Lindsey, R. Pinkel, W. S. Pegau, T. Stanton, and T. C. Grenfell, 2002. Surface Heat Budget of the Arctic Ocean, *Bull. Am. Met. Soc.*, **83**, 255-275, 2002.

- Richter-Menge, J., D. Perovich, and S. Pegau, 2001. The impact of summer ice dynamics on the surface heat budget of the Arctic Ocean, *Annals of Glaciology*, **33**, 201-206.
- Pegau, W. S., and C. A. Paulson, 2001. The albedo of Arctic leads in summer, *Annals of Glaciology*, **33**, 221-224.
- Bartlett, J. S., M. R. Abbott, R. M. Letelier, and W. S. Pegau, 2001. Analysis of a method to estimate chlorophyll-a concentration from irradiance measurements at varying depths, *J. Atmos. Ocean. Tech.*, **18**, 2063-2073.
- Johnson, D. R., A. Weidemann, and W. S. Pegau, 2001. Internal bores and bottom nepheloid layers, *Cont. Shelf Res.* **21**, 1473-1484.
- Paulson, C. A., and W. S. Pegau, 2001. Upper Ocean Structure: Penetrating Shortwave Radiation, in *Encyclopedia of Ocean Sciences*, J.H. Steele, K.K. Turekian, S.A. Thorpe, eds., Academic Press, London, volume 4 of 6, 2136-2141.
- Boss, E., and W. S. Pegau, 2001. The relationship of light scattering at an angle in the backward direction to the backscattering coefficient, *Appl. Opt.*, **40**, 5503-5507.
- Twardowski, M. S., E. Boss, J. B. MacDonald, W. S. Pegau, A. H. Barnard, J. R. V. Zaneveld, 2001. A model for estimating bulk refractive index from the optical backscattering ratio and the implications for understanding particle composition in case I and case II waters, *J. Geophys. Res.*, **106**, 14129-14142.
- Weideman, A. D., D. J. Johnson, R. J. Holyer, W. S. Pegau, L. A. Jugan, and J. C. Sandidge, 2001. Remote imaging of internal solitons in the coastal ocean, *Remote Sensing of Environment*, **76**, 260-267.
- Boss, E., W. S. Pegau, W. D. Gardner, J. R. V. Zaneveld, A. H. Barnard, M. S. Twardowski, G. C. Chang, and T. D. Dickey, 2001. Spectral particulate attenuation and particle size distribution in the bottom boundary layer of a continental shelf, *J. Geophys. Res.*, **106**, 9509-9516.
- Boss, E., W. S. Pegau, J. R. V. Zaneveld, and A. H. Barnard, 2001. Spatial and temporal variability of absorption by dissolved material at a continental shelf, *J. Geophys. Res.* **106**, 9499-9508.
- Gardner, W. D., J. C. Blakey, I. D. Walsh, M. J. Richardson, S. Pegau, J. R. V. Zaneveld, C. Roesler, M. C. Gregg, J. A. MacKinnon, H. M. Sosik, and A. J. Williams, III, 2001. Optics, particles, stratification, and storms on the New England continental shelf, *J. Geophys. Res.*, **106**, 9473-9498.
- Sosik, H. M., R. E. Green, W. S. Pegau, and C. S. Roesler, 2001. Temporal and vertical variability in optical properties of New England shelf waters during late summer and spring, *J. Geophys. Res.*, **106**, 9455-9472.
- Pegau, W. S., and J. R. V. Zaneveld, Field measurements of in-ice radiance, 2000. *Cold Reg. Sci. Tech.*, **31**, 33-46.
- Pegau, W. S., J. R. V. Zaneveld, A. H. Barnard, H. Maske, S. Avarez-Borrego, R. Lara-Lara, and R. Cervantes, 1999. Inherent optical properties of the Gulf of California, *Ciencias Marinas*, **25**, 469-485.
- Barnard, A. H., J. R. V. Zaneveld, and W. S. Pegau, 1999. Remotely sensed reflectance and the absorption coefficient: closure and inversion, *Appl. Opt.*, **38**, 5108-5117.

Perovich, D. K., E. L. Andreas, J. A. Curry, H. Eiken, C. W. Fairall, T. C. Grenfell, P. S. Guest, J. Intrieri, D. Kadko, R. W. Lindsay, M. G. McPhee, J. Morison, R. E. Moritz, C. A. Paulson, W. S. Pegau, P.O.G. Persson, R. Pinkel, J. A. Richter-Menge, T. Stanton, H. Stern, M. Sturm, W. B. Tucker III, and T. Uttal, 1999. Year on the ice gives climate insights, *EOS, Transactions, American Geophysical Union*, **80**(41), 481-486.

Barnard, A. H, J. R. V. Zaneveld, W. S. Pegau, J. L. Mueller, H. Maske, R. Lara-Lara, S. Alvarez-Borrego, and E. Valdez-Holguin, 1999. The determination of PAR levels from absorption coefficient profiles at 490 nm, *Ciencias Marinas*, **25**, 487-507.

Barnard, A. H., W. S. Pegau, and J. R. V. Zaneveld, 1998. Global relationships of the inherent optical properties of the oceans, *J. Geophys. Res.*, **103**, 24,955-24,968.

Mobley, C. D., G. F. Cota, T. C. Grenfell, R. A. Maffione, W. S. Pegau, and D. K. Perovich, Modeling light propagation in sea ice, 1998. *IEEE Trans. Geosci.Remote Sensing*, **36**, 1743-1749.

Perovich, D. K., J. Longacre, D. G. Barber, R. A. Maffione, G. F. Cota, C. D. Mobley, A. J. Gow, R. G. Onstott, T. C. Grenfell, W. S. Pegau, M. Landry, and C. S. Roesler, 1998. Field observations of the electromagnetic properties of first-year sea ice, *IEEE Trans. Geosci.Remote Sensing*, **36**, 1705-1715.

Petrenko, A. A., J. R. V. Zaneveld, W. S. Pegau, A. H. Barnard, and C. D. Mobley, 1998. Effects of a thin layer on reflectance and remote-sensing reflectance, *Oceanography*, **11**, 48-50.

Zaneveld, J. R. V., and W. S. Pegau, 1998. A model for the reflectance of thin layers, fronts, and internal waves and its inversion, *Oceanography*, **11**, 44-47.

Perovich, D. A., C. Roesler, and W. S. Pegau, 1998. Variability in sea ice optical properties, *J. Geophys. Res.*, **103**, 1193-1208.

Pegau, W. S., D. Gray, and J. R. V. Zaneveld, 1997. Absorption of visible and near-infrared light in water: the dependence on temperature and salinity, *Applied Optics*, **36**, 6035-6046.

Pegau, W. S., C. A. Paulson, and J. R. V. Zaneveld, 1996. Optical measurements of frazil concentration, *Cold Reg. Sci. Tech.*, **24**, 341-353.

Pegau, W. S., J. S. Cleveland, W. Doss, C. D. Kennedy, R. A. Maffione, J. L. Mueller, R. Stone, C. C. Trees, A. D. Weidemann, W. H. Wells, and J. R. V. Zaneveld, 1995. A comparison of methods for the measurement of the absorption coefficient in natural waters, *J. Geophys. Res.*, **100**, 13201-13220.

Pegau, W. S., J. R. V. Zaneveld, and K. J. Voss, 1995. Toward closure of the inherent optical properties of natural waters, *J. Geophys. Res.*, **100**, 13193-13199.

Pegau, W. S., and J. R. V. Zaneveld, 1993. Temperature-dependent absorption of water in the red and near-infrared portions of the spectrum, *Limnol. Oceanogr.*, **38**, 188-192.

Stamnes, K., W. S. Pegau, and J. Frederick 1990. Uncertainties in total ozone amounts inferred from zenith sky observations: implications for ozone trend analyses, *J. Geophys. Res.*, **95**, 16523-16528.

## AWARDS

Best new technology poster for “Balloon Based Oil Spill Surveillance”, by Pegau and Green presented at the International Oil Spill Conference in 2011.

College of Oceanic and Atmospheric Sciences, Excellence in Mentoring Award, 2002.

Best of session award for “Detection of subsurface internal waves via remote sensing” by Weidemann et al. presented at the fifth international conference on remote sensing for marine and coastal environments.