

Summary Curriculum Vitae 2005

Professor John F. Vesecky

EDUCATION

M. S. & Ph.D. in Electrical Engineering, Stanford University (1965-67)
B.A. & B.S. in Electrical Engineering, Rice University (1962-63)

PROFESSIONAL POSITION

Professor, Dept. of Electrical Engineering (1998 to date), University of California at Santa Cruz:
Founding Chairman of Electrical Engineering in the Baskin Engineering School
Professor Emeritus, Dept. of Atmospheric, Oceanic & Space Sciences, University of Michigan

HONORS AND AWARDS

IEEE Senior Member, 2005
State of Virginia Award: Navy Strategic Technology Transfer to Industry, 1999
Membership in The Electromagnetics Academy, 1996 to date
Rackham Research Partners Fellowship, University of Michigan 1992-93
Invited Participant, Aspen Global Change Institute, 1990, 1991, 1993
Elected to membership: International Scientific Radio Union (URSI), 1987
Elected to membership: International Astronomical Union, 1973

ADVISORY AND CONSULTING POSITIONS

NAS/NRC Naval Studies Board: C4ISR Panel
Windsat Satellite Science Team, 2001 to date
Board of Directors, Alliance for Marine Remote Sensing, 1999 to date
Panel Chair, Environmental Task Force (for Vice-President Gore), 1992 to date
Technical Oversight Group for Climate Investigations, Dept. of Energy, 1991 to date
Office of Naval Research (ONR) Research Advisory Board (1988-1990)
Consultant to MITRE Corporation (JASON) (1982 to date), ERIM (1985 to 2001) and SRI
International (1974 to date)

TEACHING EXPERIENCE

At Stanford University, the University of Michigan and now at the University of California at Santa Cruz Prof. Vesecky has taught courses in remote sensing, radar and space and electronic system design. He has supervised about 30 Masters students in remote sensing and has supervised or is supervising some 25 Ph. D. students in ocean remote sensing and related topics. These students currently hold important positions in government, industry and academia, including the Navy's Applied Physics Laboratory at the University of Washington and the NASA Jet Propulsion Laboratory.

CURRENT RESEARCH ACTIVITIES

Interferometric imaging systems for astronomy and Earth remote sensing applications
Development and application of multifrequency HF ground wave radar for coastal zone air-sea processes and ecology for naval and civil applications
Use of active and passive microwave methods for measurement of sea surface winds and temperature, using physical models with iterative and nonlinear optimization

Interpretation of synthetic-aperture radar (SAR) images of the ocean in terms of atmospheric processes, surface films and their chemistry, surface and internal waves and other ocean surface phenomena.

SELECTED RELEVANT PUBLICATIONS

Books

Bass, F. G. and I. M. Fuks, "Wave Scattering from Statistically Rough Surfaces", (translated from Russian and edited by C. B. and J. F. Vesecky), Pergamon Press, Oxford (1979).

Journal Articles, Conference Proceedings, etc.

Laws K., D. Lyzenga, D. Wiberg & J. Vesecky, Characterization of Errors in Vector Wind Retrievals from Satellite-Based Polarimetric Microwave Radiometer Measurements, **Geosci & Remote Sens Letts**, in press (2005)

Vesecky, J. F. J. A. Drake, K. E. Laws, F. L. Ludwig, C. C. Teague, J. D. Paduan and L. A. Meadows, Wind field Measurements by HF radar & their Integration into Regional Wind Field Estimates, **5th Radio Oceanography Workshop**, Costanoa CA (2005)

Vesecky, J. F., K. E. Laws and R. Fay, Ship Detection and Monitoring Using Multi-frequency HF Radars on Monterey Bay, California, **Proc. Dept. of Homeland Security: Working Together Conference**, Boston MA, April (2005)

Vesecky, J. F., Jessica Drake, Kenneth Laws, Calvin Teague, Dan Fernandez and Jeff Paduan, Constructing Surface Current Maps from HF Radars with Different Operating Frequencies, **Proc. 7th IEEE/OES Working Conference on Current Measurement Technology**, IEEE Press, Piscataway NJ (2003).

Hyland, D. J. and J. F. Vesecky, Basic advances in system architecture for interferometric imaging formations, **Proc. International Symposium on Formation Flying: Missions and Technologies**, Toulouse France, Oct. 29-31 (2002)

Vesecky, J. F., Ricardo Torres, Ajay Bharadwaj, Gabriel Loya, Nicholas Avlas and Scott Molton, Earth View – Third Millennium: A Student Designed 1 ft. Resolution, Interferometric Imaging Spacecraft, Paper AIAA 2001-4771, **Proc. American Institute of Aeronautics and Astronautics National Conference**, Albuquerque NM (Aug. 2001)

Fernandez, D. M. J. F. Vesecky, C. C. Teague, J. R. Paduan, P. E. Hansen & M. A. Plume, Detection of Ships with Multi-Frequency and CODAR Seasonde HF Radar Systems, **Can. J. Rem. Sens.**, 27, 4, 277-290 (2001)

Lettvin, E. E. and J. F. Vesecky, Estimation of wind friction velocity and direction at the ocean surface from physical models and space-borne radar scatterometer measurements, **J. Geophys. Res. (Oceans)** (2001).

Teague, C. C., J. F. Vesecky and Z. R. Hallock, A comparison of multifrequency HF radar and ADCP measurements of near-surface currents during COPE-3, **J. Oceanic Engin.**, 26, 3, 399-405 (2001)

Fernandez, D.M., L.A. Meadows, J.F. Vesecky, C.C. Teague, J.D. Paduan, and P. Hansen, Surface current measurements by HF radar in fresh water lakes. **J. Oceanic Engin.**, 25, 4, 458-471 (2000)

Vesecky, J. F., C. C. Teague, D. M. Fernandez, J. D. Paduan, J. M. Daida, R. G. Onstott, K. Laws and P. E. Hansen, HF Radar Observations of Surface Currents on Monterey Bay California, **Backscatter** (Aug., 1998)

Lin, Q., J. F. Vesecky and H. Zebker, Comparison of elevation derived from INSAR data with DEM over large relief terrain, **Intl. J. Rem. Sensing** **15**, 9, 1775-1790 (1994)

Lin, Q., J. F. Vesecky and H. K. Zebker, Phase unwrapping through fringe line detection in synthetic aperture radar interferometry, **Appl. Op.** **33**, 2, 201-208 (1994).

Wood, B. L., L. R. Beck, J. G. Lawless and J. F. Vesecky, Preliminary considerations for a small satellite to monitor environmental change associated with vector-borne disease, **J. Imag. Sci & Tech.** **36**, 5, 431-439 (1992).

Lin, Q., J. F. Vesecky and H. Zebker, New approaches in interferometric SAR data processing, **IEEE Trans. Geosci. & Remote Sens.** **30**, 560-567 (1992).