

Dr. Robert Fusina
Summary of Professional Qualifications

Naval Research Laboratory (NRL), Washington, DC, May, 1993 - Present
Research physicist

Allied-Systems Technical Services Corporation, Camp Springs, MD, January, 1992 - May, 1993
Project Systems Analyst

Office of Naval Technology, Washington, DC, January 1989 - January 1992
Postdoctoral Fellow in Condensed Matter and Radiation Sciences Division, Naval Research Laboratory

Education:

State University of New York at Albany: **Ph. D.** in Physics, August, 1988;
Dissertation under Professor John Kimball.
M. S. in Physics, May, 1986;
Manhattan College: **B. S.** in Physics, June, 1983.

Research Activities:

Study of automated detection and classification methods, particularly statistical pattern recognition methods. Focus on image and signal processing in remote sensing applications and sensor fusion.
Use of hyperspectral remote sensing data. Investigation of algorithms and data processing techniques. Application of radiative transfer theory models to coastal soils.
Remote sensing of soil condition and trafficability.

Selected Recent Publications:

- C. M. Bachmann, M. J. Montes, C. Parrish, R. A. Fusina, C. R. Nichols, R. Li, E. Hallenborg, C. Jones, K. Lee, J. Sellars, S. White, and J. C. Fry, "A dual spectrometer approach to reflectance measurements under sub-optimal sky conditions," *Optics Express* **20** (2012) 8959.
- C. M. Bachmann, C. R. Nichols, M. J. Montes, R. Li, P. Woodward, R. A. Fusina, W. Chen, M. Crawford, V. Mishra, W. Kim, J. Monty, K. McIlhany, K. Kessler, D. Korwan, D. Miller, E. Bennert, G. Smith, D. Gillis, J. Sellars, C. Parrish, A. Schwarzschild and B. Truitt, "Retrieval of substrate bearing strength from hyperspectral imagery during the Virginia Coast Reserve (VCR'07) multi-sensor campaign," *Marine Geodesy* **33** (2010) 109.
- C. M. Bachmann, M. J. Montes, R. A. Fusina, C. Parrish, J. Sellars, A. Weidemann, W. Goode, V. Hill, R. Zimmerman, C. R. Nichols, P. Woodward, K. McIlhany, D. Korwan, B. Truitt and A. Schwarzschild, "Bathymetry retrieval from hyperspectral imagery in the very shallow water limit: a case study from the 2007 Virginia Coast Reserve (VCR'07) multi-sensor campaign," *Marine Geodesy* **33** (2010) 53.
- C. M. Bachmann, T. L. Ainsworth, R. A. Fusina, M. J. Montes, J. H. Bowles, D. R. Korwan and D. B. Gillis, "Bathymetric retrieval from hyperspectral imagery using manifold coordinate representations," *IEEE Transactions on Geoscience and Remote Sensing* **47** (2009) 884.

- C. M. Bachmann, T. L. Ainsworth and R. A. Fusina, "Improved manifold coordinate representations in large scale hyperspectral scenes," IEEE Transactions on Geoscience and Remote Sensing 44 (2006) 2786.
- C. M. Bachmann, T. L. Ainsworth and R. A. Fusina, "Exploiting manifold geometry in hyperspectral imagery," IEEE Transactions on Geoscience and Remote Sensing 43 (2005) 441.
- C. M. Bachmann, M. H. Bettenhausen, R. A. Fusina, T. F. Donato, A. L. Russ, J. W. Burke, G. M. Lamela, W. J. Rhea, B. R. Truitt and J. H. Porter, "A Credit assignment approach to fusing classifiers of multiseason hyperspectral imagery," IEEE Transactions on Geoscience and Remote Sensing 41 (2003) 2488.
- C. M. Bachmann, T. F. Donato, G. M. Lamela, W. J. Rhea, M. Bettenhausen, R. A. Fusina, K. Du Bois, J. H. Porter and B. R. Truitt, "Automatic classification of land-cover on Smith Island, VA using HyMAP imagery," IEEE Transactions on Geoscience and Remote Sensing **40** (2002) 2313.