Biographical Sketch

LAWRENCE PAUL SANFORD

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Professional Preparation:

1984 Ph.D., Woods Hole Oceanographic Institution/Massachusetts Institute of Technology Joint Program in Oceanography and Oceanographic Engineering, Oceanographic Engineering.
1978 Sc.B., magna cum laude, Brown University, Mechanical Engineering

Appointments:

2001-present Professor, University of Maryland Center for Environmental Science, Horn Point Laboratory (UMCES, HPL)
1993-2001 Associate Professor, UMCES, HPL
1987-1993 Assistant Professor, UMCES, HPL
1984-1987 Postdoctoral Research Associate, UMCES, HPL

Honors:

NSF Graduate Fellowship, 1978-2001
University of Maryland Marine, Estuarine, and Environmental Sciences Program Graduate Education Award, 1996
Kirby Laing Fellowship for Visiting Scholars, School of Ocean Sciences, Univ. of Wales, Bangor, 2005

Publications in the past three years:

Chen, S.N., L.P. Sanford, D.K. Ralston, in review. Lateral circulation and sediment transport driven by axial winds in an idealized, partially mixed estuary. J. Geophys. Res.

Dickhudt, P.J., Friedrichs, C.T., and Sanford, L.P., in review. Mud matrix solids fraction and bed erodibility in the York River, USA, and other muddy environments. P. Le Hir, ed., Nearshore and Estuarine Cohesive Sediment Transport Processes, Elsevier Press.

Rinehimer, J.P., Harris, C.K., Sherwood, C.R. and Sanford, L.P., 2008. Estimating cohesive sediment erosion and consolidation in a muddy, tidally-dominated environment: Model behavior and sensitivity, Proceedings of the 10th International Conference on Estuarine and Coastal Modeling. In press, Newport, RI.

Chen, S.N. and Sanford, L.P.,2008. Lateral Circulation Driven by Boundary Mixing and the Associated Transport of Sediments in Idealized Partially-Mixed Estuaries. Continental Shelf Research, doi:10.1016/j.csr.2008.01.001, in press.

Sanford, L.P., 2008. Modeling a dynamically varying mixed sediment bed with erosion, deposition, bioturbation, consolidation, and armoring. Computers and Geosciences (PREMISE Special Issue, J. Syvitski, Editor), doi:10.1016/j.cageo.2008.02.011, 34(10): 1263-1283.

Chen, S.N., Sanford, L.P., Koch, E.W., Shi, F. and North, E.W., 2007. A Nearshore Model to Investigate the Effects of Seagrass Bed Geometry on Wave Attenuation and Suspended Sediment Transport. Estuaries and Coasts 30(2):296-310.

Fugate, D.C., Friedrichs, C.T. and Sanford, L.P., 2007. Lateral dynamics and associated transport of sediment in the upper reaches of a partially mixed estuary, Chesapeake Bay, USA. Continental Shelf Research, 27(5): 679–698.

Sanford L.P., 2006. Uncertainties in Sediment Erodibility Estimates Due to a Lack of Standards for Experimental Protocols and Data Interpretation. Integrated Environmental Assessment and Management, 2(1):29-34.

Stoecker, D. K. Long, A., Suttles, S.E., Sanford, L.P., 2006. Effect of Small-Scale Shear on Grazing and Growth of Pfiesteria piscicida. Harmful Algae, 5(4): 407-418. UMCES Contribution No. 3958.

North, E. W., R. R. Hood, S.-Y. Chao, L. P. Sanford, 2006. Using a random displacement model to simulate turbulent particle motion in a baroclinic frontal zone: a new implementation scheme and model performance tests. J. Marine Systems, 60(3-4): 365-380. UMCES Contribution No. 3875.

Maa, J.P.-Y., Sanford, L.P. and Schoellhamer, D. (Editors), 2006. Estuarine And Coastal Fine Sediment Dynamics. Elsevier, Amsterdam, 540 pp.

Five Other Publications Related to the Proposed Project:

Sanford, L. P., P. Dickhudt, L. Rubiano-Gomez, M. Yates, S. Suttles, C. T. Friedrichs, D. D. Fugate, and H. Romine, 2005. Variability of suspended particle concentrations, sizes and settling velocities in the Chesapeake Bay turbidity maximum. *in* Flocculation in Natural and Engineered Environmental Systems. I. G. Droppo, G. G. Leppard, P. Liss and T. Milligan, eds. Boca Raton, Florida, CRC Press, LLC: 211-236.

Li, M., L. Sanford, and S. Y. Chao, 2005. Effects of Time-dependence in Unstratified Tidal Boundary Layers: Results from Large Eddy Simulations. Estuarine, Coastal, and Shelf Science. 62(1-2): 193-204.

North, E.W., Chao, S.-Y., Sanford, L.P. and Hood, R.R., 2004. The influence of wind and river pulses on an estuarine turbidity maximum: numerical studies and field observations. Estuaries 27(1): 132-146.

Sanford, L.P., Suttles, S.E. and Halka, J.P., 2001. Reconsidering the physics of the Chespeake Bay Estuarine Turbidity Maximum. Estuaries, 24(5): 655-669.

Sanford, L.P. and Maa, J.P.-Y., 2001. A unified erosion formulation for fine sediments. Marine Geology, 179(1-2): 9-23.

Synergistic Activities:

Member of USEPA Chesapeake Bay Program (CBP) Sediment Workgroup;
Member of USEPA CBP Scientific and Technical Advisory Committee;
Reviewer for numerous journals and funding agencies;
Editorial Advisory Board member, Limnology and Oceanography: Fluids and Environments
Sediment transport modeling consultant for Hydroqual, Inc., Mahwah, NJ.

Collaborators and Other Affiliations

Academic Collaborators and Co-Editors (last 48 months)

J. Baker, A. Blumberg, W. Boicourt, M-L. Chang, S.-Y. Chao, B. Crump, R. Diaz, D. DiToro, K. Farley, C. Friedrichs, W.R. Geyer, P. Glibert, J. Halka, C. Harris, P. Hill, D.V. Holliday, R. Hood, E. Houde, T. Hsu, M. Kemp, G. Kineke, E. Koch, S. Kuehl, J. Maa, R. Mason, T. Milligan, R. Newell, E. North, E. Porter, M. Roman, L. Schaffner, D. Schoelhamer, C. Sherwood, R. Signell, D. Stoecker, A. Valle-Levinson, J. Warner, R. Wheatcroft, P. Wiberg

Graduate and Postdoctoral Advisors

W.D. Grant (deceased), W. Boicourt, L. Ward

Postdoctoral Associates

Y.-H. Kim (current), S. Werner

Students

B. Alleva; L. Bell (current); S.-N. Chen; S. Crawford; M.-L. Chang; W. Lin; E. Porter; K. Ruffin