

Qualifications Summary

- More than 20 years of experience in the fields of oceanography, coastal engineering, sediment transport, and nearshore processes
- Writes and works with assembly and higher level (e.g., C, Matlab) languages for microprocessor control, data collection, data analysis, numerical calculations, and simulations.
- Experienced professional diver, certified for operations on UNOLS research vessels.
- Has developed instrument systems and software for biogeochemical and physical oceanographic investigations, fisheries research, and medical equipment.
- Experienced in current measurement technologies.
- Worked on developing acoustic differential travel time instrumentation to study the velocity structure of the continental shelf wave bottom boundary layer.
- Design and development of interactive and expert system software and communications circuitry to provide real-time display and interpretation of dynamic fishnet behavior.
- Design and development of interactive model data extraction and plotting software to support protected species research and by-catch analysis.

Archie Todd Morrison III, Ph.D., O.E., M.S., B.A.

Senior Ocean Engineer

Professional Affiliations

Member of the Institute of Electrical and Electronic Engineers (IEEE) since 1995

- Senior Member of IEEE since 2005

Member of the IEEE Oceanic Engineering Society (OES) since 1995

- IEEE / OES Administrative Committee 2000 to Present
- IEEE / OES Current Measurement Technology Committee (CMTC)
 - Finance Chair 2001 to 2005
- IEEE / OES Webmaster 2001 to 2009
- IEEE / OES / MTS OCEANS Webmaster 2003 to Present
- IEEE / OES Constitution and Bylaws Committee 2004 to 2005
- IEEE / OES Distinguished Service Award 2008

Massachusetts Informal Educator of the Year 2000, Massachusetts Marine Educators

Fields of Expertise

Design and development of software and circuitry for the MAVS-3 acoustic velocity sensor, ancillary sensors and output devices, equipment manuals, professional papers, real-time and post-processing data analysis software. Development of instrumentation for research, particularly for ocean science. Analog and digital electronic design and fabrication, mechanical design and fabrication, structural mechanics and the behavior of materials, and hydrodynamics, particularly boundary layer flows and the interactions of fluids and structures. Writing and working with assembly and higher level (e.g., C, Matlab) languages for microprocessor control, data collection, data analysis, numerical calculations, and simulations.

Higher Education

Ph.D., Oceanographic Engineering-Massachusetts Institute of Technology and Woods Hole Oceanographic Institution (1997)

O.E., Oceanographic Engineering-Massachusetts Institute of Technology and Woods Hole Oceanographic Institution (1994)

M.S., Ocean Engineering-Massachusetts Institute of Technology (1994)

Yale University, Special Student in Mathematics (1986-1987)

B.A., Engineering and Applied Science / Electrical Engineering-Harvard University, cum laude (1981)

Employment History

2009-Present Woods Hole Group, Inc.
2000-Present Nobska Development, Inc., Senior Engineer / Vice President for Engineering
2006-2007 Webb Research Corp., Senior Engineer
2003-Present Integrated Statistics, Inc., Oceanographic Engineer
1998-2003 McLane Research Laboratories, Inc., Senior Engineer for Electronic Systems
1997-Present Woods Hole Oceanographic Institution, Visiting / Guest Investigator
1987-1989 St.Luke's Community Kitchen, Director of Mail Services
1981-1986 Raytheon Service Company, Field Engineer / Senior Field Engineer from 1985

Publications and Presentations

- Morrison, A. T., III, "The West Falmouth Spill: A Scientific Inquiry", *SierraAtlantic Magazine*, October-November 1978, Vol. 5, No. 5, pp. 5 and 8.
- Morrison, A. T., III, Yoerger, D. R., "Determination of the Hydrodynamic Parameters of an Underwater Vehicle During Small Scale, Nonuniform, 1-Dimensional Translation", *Proceedings OCEANS '93*, IEEE/OES, October 1993, Vol. II, pp. 277-282.
- Morrison, A. T., III, Williams, A. J., 3rd, Martini, M., "Calibration of the BASS Acoustic Current Meter With Carrageenan Agar", *Proceedings OCEANS '93*, IEEE/OES, October 1993, Vol. III, pp. 143-148.
- Morrison, A. T., III, "System Identification and State Reconstruction for Autonomous Navigation of an Underwater Vehicle in an Acoustic Net", MS/OE thesis, Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program in Oceanographic Engineering, February 1994.
- Morrison, A. T., III, Williams, A. J., 3rd, "STRESS II BASS Data Archive", CD-ROM, NetCDF binary and ASCII files, MATLAB binary and ASCII files, December 1994.
- Morrison, A. T., III, "A New Technique for Detailed Acoustic Current Profiles in the Continental Shelf Wave Bottom Boundary Layer", *Proceedings of the IEEE Fifth Working Conference on Current Measurement*, IEEE/OES, February 1995, pp. 220-225.
- Morrison, A. T., III, "Multiplexer Design for the BASS Rake Acoustic Transducer Array", *Proceedings OCEANS '95*, MTS/IEEE/OES, October 1995, Vol. III, pp. 1528-1532.
- Morrison, A. T., III, "Low Impedance Multiplexer for the BASS Rake Transducer Array", *Sea Technology*, May 1996, Vol. 37, No. 5, pp. 15-21.
- Morrison, A. T., III, Williams, A. J., 3rd, "Preliminary Tow Tank and Flume Tests of a Prototype BASS Rake Wave Bottom Boundary Layer Sensor", *Proceedings OCEANS '96*, MTS/IEEE/OES, September 1996, Vol. I, pp. 451-456.

Publications and Presentations (continued)

Williams, A. J., 3rd, Morrison, A. T., III, "Shallow-Water Messenger-Line Recovery System", *Proceedings OCEANS '96*, MTS/IEEE/OES, September 1996, Vol. II, pp. 646-649.

Williams, A. J., 3rd, Thwaites, F. T., Morrison, A. T., III, "Transducer Supports for Acoustic Travel-Time Current Meters - Flow Sampling, Wake, and Potential Flow Distortion Considerations", *Proceedings Microstructure Workshop*, Mount Hood, OR, 1996.

Morrison, A. T., III, "Development of the BASS Rake Acoustic Current Sensor: Measuring Velocity in the Continental Shelf Wave Bottom Boundary Layer", Ph. D. thesis, Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program in Oceanographic Engineering, June 1997.

Morrison, A. T., III, "Results from the First Deployment of the BASS Rake Field Prototype", *Proceedings OCEANS '97*, MTS/IEEE/OES, October 1997, Vol. I, pp. 518-523.

Morrison, A. T., III, Williams, A. J., 3rd, "Near Bottom Velocity Profile Measurement Using the Field Prototype of the BASS Rake Wave Bottom Boundary Layer Sensor", *Proceedings WAVES '97*, CZF/ASCE, November 1997, Vol. II, pp. 1088-1102.

Morrison, A. T., III, "Near Bottom Velocity Measurement", *Sea Technology*, March 1998, Vol. 39, No. 3.

Morrison, A. T., III, "The Single Axis Sample Volume of the BASS Rake Acoustic Current Sensor", *Proceedings OCEANS '98*, IEEE/OES, September 1998, Vol. I, pp. 239-243.

Morrison, A. T., III, Cowen, E. A., Liu, P. L.-F., "Velocity Profile Measurements in the Crest of a Breaking Wave Using the BASS Rake Acoustic Velocity Sensor", *Proceedings of the IEEE Sixth Working Conference on Current Measurement*, IEEE/OES, March 1999, pp. 221-226.

Morrison, A. T., III, Williams, A. J., 3rd, "Location and Recovery of Lost Instruments", *Proceedings OCEANS '99*, MTS/IEEE/OES, September 1999, Vol. III, pp. 1429-1434.

Morrison, A. T., III, Billings, J. D., Doherty, K. W., Toole, J. M., "The McLane Moored Profiler: A Platform for Physical, Biological, and Chemical Oceanographic Measurements", *Proceedings OCEANOLOGY International 2000*, March 2000, pp. 397-414.

Morrison, A. T., III, Billings, J. D., Doherty, K. W., "The McLane Moored Profiler: An Autonomous Platform for Oceanographic Measurements", *Proceedings OCEANS 2000*, MTS/IEEE/OES, September 2000, Vol. I, pp. 353-358.

Morrison, A. T., III, Billings, J. D., Doherty, K. W., "The McLane Zooplankton Sampler: An Autonomous, Time-Series, Zooplankton Sampling Instrument", *Proceedings OCEANS 2000*, MTS/IEEE/OES, September 2000, Vol. II, pp. 841-845.

Publications and Presentations (continued)

- Morrison, A. T., III, Billings, J. D., Doherty, K. W., "The McLane WTS-LV: A Large Volume, High Accuracy, Oceanographic Sampling Pump", *Proceedings OCEANS 2000*, MTS/IEEE/OES, September 2000, Vol. II, pp. 847-852.
- Morrison, A. T., III, Toole, J. M., Lukas, R., WorriLOW, S. E., Doherty, K. W., "Results From the First Successful Field Deployment of the McLane Moored Profiler", *Proceedings OCEANS 2001*, MTS/IEEE/OES, November 2001, Vol. II, pp. 949-955.
- Morrison, A. T., III, Williams, A. J., 3rd, Waterbury, A. C., Tierney, C. M., "Analog Output from a Differential Travel-Time Current Meter", *Proceedings OCEANS 2002*, MTS/IEEE/OES, October 2002, pp. 708-712.
- Yamamoto, H., Fukasawa, M., Yoshikawa, Y., Hatayama, T., Morrison, A. T., III, Toole, J. M., "The First Science Deployment of a McLane Moored Profiler", *Proceedings of Techno-Ocean 2002*, Techno-Ocean Network, November 2002.
- Morrison, A. T., III, "MWAVES Directional Wave Spectra Software", *Sea Technology*, February 2003, Vol. 44, No. 2, pp. 45-48.
- Morrison, A. T., III, "MWAVES – Software for Calculating the Directional Spectra and Statistical Properties of the Wave Field From MAVS-3 Triplet Measurements", *Proceedings of the IEEE Seventh Working Conference on Current Measurement*, IEEE/OES, March 2003, pp. 128-134.
- DiMassa, D. E., Piskura, J., Morrison, A. T., III, "Flow-Generated Power for Autonomous Instruments", *Proceedings of the IEEE Seventh Working Conference on Current Measurement*, IEEE/OES, March 2003, pp. 282-286.
- Williams, A. J., 3rd, Morrison, A. T., III, "Electronic Crosstalk and Linearity in the Acoustic Travel-Time Current Meter, MAVS", *Proceedings OCEANS 2003*, MTS/IEEE/OES, September 2003, pp. 1510-1515.
- Pfitsch, D. W., Morrison, A. T., III, "Performance of Large Volume Water Transfer Systems During *In-Situ* Water Sampling", *Proceedings OCEANS 2003*, MTS/IEEE/OES, September 2003, pp. 2242-2246.
- Williams, A. J., 3rd, Terray, E. A., Morrison, A. T., III, "Bottom Stress Measurements in Shallow Water Under Waves", *Proceedings of the First US-Baltic International Symposium*, IEEE/OES, June 2004.
- Morrison, A. T., III, Brown, R. W., Politis, P. J., DeAlteris, J. T., "Measurement of Net-Relative Flow During a Bottom Trawl Survey", *Proceedings OCEANS 2004*, MTS/IEEE/OES, November 2004, pp. 449-452.

Publications and Presentations (continued)

Williams, A. J., 3rd, Morrison, A. T., III, “Near Bottom Measurement of Wave Environment in a Tidal Current”, *Proceedings OCEANS 2005 Europe*, IEEE/OES, June 2005.

Williams, A. J., 3rd, Morrison, A. T., III, Brody, S. R., “Vertical Cosine Response of a Faired Ring Acoustic Current Meter”, *Proceedings of the IEEE Eighth Working Conference on Current Measurement*, IEEE/OES, June 2005, pp. 19-25.

Morrison, A. T., III, Williams, A. J., 3rd, Lorang, M., “Waves and Seiches in Flathead Lake Montana, Measurements of a Quiet Lake by Acoustic Travel-Time Current Measurements”, *Proceedings OCEANS 2005 MTS/IEEE Washington*, MTS/IEEE/OES, September 2005.

Taylor, C. D., Doherty, K. W., Molyneaux, S. J., Morrison, A. T., III, Billings, J. D., Engstrom, I. B., Pfitsch, D. W., Honjo, S., “Autonomous Microbial Sampler (AMS), A Device for the Uncontaminated Collection of Multiple Microbial Samples from Submarine Hydrothermal Vents and Other Aquatic Environments”, *Deep-Sea Research Part I: Oceanographic Research Papers*, Volume 53, Issue 5, May 2006, pp. 894-916.

Morrison, A. T., III, Brown, R. W., Despres, L. I., Nordahl, V. A., Jr., Galbraith, J. K., “FNET – Real-Time FishNet Evaluation Tool”, *Proceedings OCEANS 2006 IEEE Singapore*, IEEE/OES, May 2006.

Williams, A. J., 3rd, Morrison, A. T., III, Farrell, J. E., “Measurements of Surf Zone Currents and Waves in Support of Madaket and Sankaty Head, Nantucket, Beach Nourishment”, *Proceedings OCEANS 2007 IEEE Aberdeen*, IEEE/OES, June 2007.

Posters:

Taylor, C. D., Doherty, K. W., Molyneaux, S. J., Morrison, A. T., III, Engstrom, I. B., Pfitsch, D. W., “Autonomous Microbial Sampler (AMS): Device for the Uncontaminated Collection of Microbial Samples from Submarine Hydrothermal Vents and Other Aquatic Environments”, *Dark Energy – The Deep Oceanic Biosphere Workshop*, Deep Ocean Exploration and Ocean Life Institutes of the Woods Hole Oceanographic Institution, October 2004.