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Education:

2004 B.S. Environmental Science/Marine Science Option
Rutgers University, New Brunswick, NJ

Employment:

1995-1996 Laboratory Assistant, Institute of Marine and Coastal Sciences, Rutgers University, New Brunswick, NJ
1996-1999 Assistant Manager, Portus Nova, Inc., Freehold, NJ
2000-June 2001 Assistant Marine Engineer, Institute of Marine and Coastal Sciences, Rutgers University, New Brunswick, NJ
June 2001-Present Field Researcher, Institute of Marine and Coastal Sciences, Rutgers University, New Brunswick, NJ

Professional Affiliations:

January 2002-present: American Geophysical Union.

Research Activities:

Field operations are my forte. Research activities focus on the collection, analysis, visualization and interpretation of datasets gathered by various oceanographic instrumentation such as CTD (Conductivity-Temperature-Depth), OBS (Optical Back Scatter), ADCP (Acoustic Doppler Current Profiler), LISST (Laser In-Situ Scattering and Transmissometry), CODAR (Coastal Ocean Dynamic Applications Radar), and Slocum shallow water electric gliders. Design, construction, and implementation of moorings, along with associated instrumentation setup and programming are also within my expertise. Recent activities have centered around deployment/recovery, general repair, maintenance, design and flight characteristic improvements of Slocum shallow water electric gliders. Data sets from several projects (i.e. Newark Bay, LaTTE, Passaic River DOT) are available online at <http://marine.rutgers.edu/cool>.

Presentations:

POSTER: Particle Concentrations and Size Distributions: Implications for Contaminant Transport in NY-NJ Harbor—New York Bight. Ocean Sciences 2002 AGU/ASLO Meeting, Honolulu, HI Monday, February 11th, 2002

TALK: Enabling Discovery Based Science with Webb Gliders. Freeport Tuna Club, monthly meeting, Freeport, NY. Thursday, June 12th, 2008

Special Skills:

PADI certified—Advanced SCUBA

NAUI Advanced Rescue Diver—includes First Aid, CPR, O₂ administration, and AED (Automated External Defibrillator) certification

Familiar with surface supplied (hard hat) diving equipment and techniques

Small boat handling; familiar w/ outboard and inboard operation, single and dual

Computer Skills:

Proficient in the use of:

--ArcInfo GIS

--Matlab

--Dreamweaver and other web design/maintenance utilities

--Microsoft Office products (incl. Word, Excel, PowerPoint, etc.)

--Various video capturing and editing programs (incl. Dazzle hardware and software, Tmpeg, Virtual Dub, etc.—able to digitize video from VCR, camcorder, web streams, computer desktop, etc. for creating mpegs, Video CDs, DVDs, etc.)

--All Microsoft Windows editions from 95 to XP; also familiar with networking for these systems

--Various File Transfer Protocol (FTP) and Virtual Networking Client (VNC) programs, including Secure Shell and IP updaters for DHCP clients

--Terminal programs for standard serial communications

--Navigational/charting software, including GPS interfaced applications and Google Earth

--Numerous programs for oceanographic instrumentation

Oceanographic Instrumentation:

Sontek Acoustic Doppler Velocimeter and Profiler (ADV, ADP), RDI Acoustic Doppler Current Profiler (ADCP), Various Conductivity/Temperature/Depth (CTD) sensors—Seabird, Ocean Sensors, AML and FSI, D&A Optical Backscatter Sensor (OBS), Benthos Altimeter, Sequoia Laser In-Situ Scattering and Transmissometer (LISST), Chelsea Aquatracka Fluorometer, Seapoint fluorometers, Nortek AWAC (Acoustic Waves And Currents), Nortek Aquadopp current meter, Seabird oxygen sensor, various dataloggers, numerous

GPS/Chartplotter units (includes theory, operation, and navigational usage), RAS (Remote Automated Sampler), Onset thermistors, several Satlantic sensors, such as TSRB, PAR sensors, backscatter and fluorometry pucks, Carlo Erba Elemental Analyzer (Carbon Nitrogen Hydrogen Sulfur analysis—combustion method), Freewave communications, laser particle counter for sediment grain size analysis, various filtering methods for determination of total suspended sediments, various ARGOS drifters, Coastal Ocean Dynamic Applications Radar (CODAR) systems, **extensive knowledge of Slocum shallow water electric gliders**, including deployment/recovery, maintenance, repair, testing, payload development, flight control and flight characteristic analysis. Adept at using machinery (saws, drills, lathes, mills) and hand tools

Field Experience:

Slocum Shallow Water Electric Gliders (2005-present)

Projects have been too numerous to detail; including multiple MURI and MARCOOS lines from MA to NJ and from NJ to NC, respectively, RIMPAC in Hawaii, Endurance lines off NJ coast, Shallow Water 2006, flights in Antarctica, Italy, Australia, Lebanon, California, Puerto Rico, and Japan. Also participated in design and construction of glider RU17, known as the Scarlet Knight, attempting to become the first autonomous vehicle to cross the Atlantic Ocean. Worked with a variety of new science payloads for gliders, from CTD only to optics pucks (backscatter and fluorometry), SAMs (scattering and attenuation meter), AUVB (updated SAM), Breve buster (organism/plankton/red tide detector), oxygen optode (optical oxygen measurement), FIRE sensor (fluorometer to measure health of phytoplankton), and “stretched” payloads. Project flight details can be found at <http://marine.rutgers.edu/cool/auvs/> Participated in several glider training sessions. Trainees include Navy personnel, NATO personnel, and personnel from various educational institutions.

CODAR (2005-present)

Assisted in numerous ongoing CODAR projects. Includes site scouting, design and installation, troubleshooting (remotely and on-site), maintenance, and repair of sites from MA to NC. Assisted TAMU/SERF with installations in Galveston, TX area. Participated in construction, deployment, troubleshooting, and recovery of bistatic CODAR buoy deployed in coastal ocean off NJ.

Sea Grant – Codar Algorithm Development 2005-2008

Designed and deployed moorings in coastal ocean off NY and NJ. Included design, construction, implementation, organization, instrument programming, data download and initial analysis; instruments deployed included three types of Doppler current profilers with wave packages to assist in development of shallow water wave algorithm for CODAR systems

PIMMS SPRITZ, 2006-2007

Assisted in shipboard activities for NOPP acoustic instrument development with APL in Washington. Activities included mooring design/deployment, processing/visualization of underway data to determine adaptive sampling, CTD/Rosette operation/profiling, optics cage assembly, programming, and operation/profiling, biological sampling techniques with various net configurations

Biocomplexity 2006-2007

Designed and deployed mooring for newly developed MEA (enzyme analyzer) near LEO-15 (offshore NJ). Assisted in diving operations, including anchoring and attaching to LEO-15 node.

Newark Bay, 2008-2009 (Hudson River Foundation, Chant)

Mooring deployments and recoveries in the Passaic & Hackensack rivers, Newark Bay, Kill Van Kull, and Arthur Kill, including design, construction, implementation, organization, instrument programming, data download and initial analysis; instruments deployed include numerous CT sensors, turbidity sensors, thermistors, acoustic releases and three types of Doppler current profilers

Passaic River DOT Pilot Dredging Project (December 2005)

Numerous hydrographic surveys with towed adcp, ctd, obs, altimeter, and lisst (w/ integrated gps)

Mooring deployments and recoveries in the Passaic River, New Jersey, including design, construction, implementation, organization, and instrument programming, data download and initial analysis; instruments deployed include numerous CT sensors, turbidity sensors, thermistors, and two types of Doppler current profilers

*Article on project in December 2005 issue of World Dredging: Mining & Construction

Passaic River DOT Pilot Study Planning Project (June 2004 – September 2005)

Numerous hydrographic surveys with towed adcp, ctd, obs, altimeter, and lisst (w/ integrated gps). Occasional dye tracking surveys required fluorimeters as well.

Mooring deployments and recoveries in the Passaic River, New Jersey, including design, construction, implementation, organization, instrument programming, data download and initial analysis; instruments deployed include numerous CT sensors, turbidity sensors, thermistors, and two types of Doppler current profilers

Total mooring deployments in Passaic River: 4, each consisting of 6-7 moorings.

LaTTE (LaGrangian Transport and Transformation Experiment) – May 2003-2006

Hydrographic surveys with towed adcp, ctd, obs, altimeter, and various fluorometers tracking dye, chlorophyll, and CDOM; for purposes of mapping the Hudson River plume. Extensive shipwork; please ask for details.

Mooring deployments and recoveries in the coastal ocean off New Jersey, including design, construction, implementation, organization, instrument programming, data download and initial analysis; instruments deployed include numerous CT sensors, turbidity sensors, thermistors, and two types of Doppler current profilers. Current profilers are situated on tripod to be leveled by a diver.

Total mooring deployments for LaTTE: 3 (1st deployment – 2 moorings. 2nd deployment – 5 moorings. 3rd deployment – 7 moorings)

Boundary Layer Stress and Sediment Transport Study (NURP – LEO 15) (2001)

Assisted in setup and deployment of BASS tripod. Configured and operated cabled listt instruments for duration of project.

Flushing Bay (Queens, NY) Combined Sewage Overflow (CSO) Hydrographic Study (November 30 - December 1, 2004)

Hydrographic surveys with towed adcp, ctd, obs, altimeter, and listt; performed for a consulting company.

Transformation of Particulate Organic Matter by Sediment Transport in Continental Shelf Sands – Observations from LEO 15 (June-July 2004, November 2004, June 2005, October-November 2005)

Multiple mooring deployments and recoveries in coastal ocean off New Jersey (LEO 15), including design, construction, implementation, organization, instrument programming, data download and initial analysis; instruments deployed include rdi adcp, sonTek adp, Nortek Aquadopp, SBE CT sensor w/ pumped O₂ sensor, obs (configurations were different for each deployment). Also setup, programmed, and deployed RAS (remote automated sampler). Project included numerous diving activities, from setting tripods (surface-supplied) to taking sediment cores and setting 'sipper' device (scuba).

Newark Bay Project – DOT/DEP funded (Dec. 2000-Dec 2002)

Numerous hydrographic surveys (approximately 20 over a 2 year period) in Newark Bay and surrounding waterways; package consisted of a towed adcp, and casts with either internally logged or real-time ctd, obs, and listt; Occasional water sampling with Niskin bottle or pump

Mooring deployments and recoveries in Newark Bay and surrounding waterways, including instrument programming, data download and initial analysis; typical package consisted of adp, listt, ctd, and obs with acoustic releases

Total mooring deployments for Newark Bay: 8 (number of moorings varies; available online)

HyCODE/COMOP (LEO 2001)

Numerous hydrographic surveys of the coastal ocean off New Jersey; package consisted of Mini-bat (towed oscillating package with FSI ctd, obs, and fluorometer), towed adcp, and hand-lowered list

Data analysis for all list data collected
Designed and constructed new rigging for towed adcp

Navesink River Project (2002- June 2003)

Multiple hydrographic surveys with ctd, list, obs, and altimeter—completely self-contained package requiring no power input from vessel

Mooring design, construction, deployment and recovery, including instrument programming. Total--4 sawhorse-style moorings and 2 pole moorings containing approximately 20 separate instruments--adv, adp, adcp, obs, ctd, list, aquadopp

Total mooring deployments for Navesink: 2, each consisting of 5 moorings

Hudson Dye Experiment (HuDEx) (Spring 2001)

Hydrographic surveys of Hudson River; tracing dye patch with ctd, obs, fluorometer package and towed adcp

Chemical and Biological Implications of Water Flow Through Permeable Sediments (August 11-15, 2000)

Five day cruise aboard the R/V Cape Henlopen; operated continuous pCO₂ analyzer, programmed and deployed Aquadopp current meter, various deckhand duties
Adapted/constructed parts of deployed tripod for specific use

CICEET project (2000)

Stimulation of Organic Contaminant Biodegradation Through The Amendment of Anaerobic Electron Acceptors To Estuarine Sediments

Sediment coring, prepping, recovery and chemical analysis (C, N, H, using Carlo Erba elemental analyzer)

Beach Profiling

Longterm monitoring of changes in beaches at Sandy Hook, including geomorphology and volume fluctuations

Also involved in various other projects requiring a technician familiar with instrumentation (i.e. Tuckerton dredging project (use of adcp for current and sediment flux estimations), various Hudson River cruises w/ dye injections for tracing turbulent flow, various fieldwork demonstrations with Liberty Science Center for teachers and/or students, etc.)

References:

Dr. Oscar Schofield
732-932-6555 x548

Dr. Robert Chant
732-932-6555 x544

Dr. Scott Glenn
732-932-6555 x506