

## **G. Jason Smith**

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### **EDUCATION**

University of Georgia, Department of Zoology, Athens, GA, Ph.D. 1984  
University of Michigan, LSA - Biological Sciences, Ann Arbor, MI, B.S in Zoology  
with High Distinction 1978  
Bennett High School, Buffalo, NY 1974

### **ACADEMIC HONORS AND AWARDS**

Australian Museum Lizard Island Research Station Bicentennial Fellowship 1987  
Starr Fellowship, Bermuda Biological Station, 1986  
National Science Foundation Postdoctoral Fellowship in Plant Biology, 1985  
Phi Kappa Phi, University of Georgia, inducted 1984  
Sigma Xi, University of Georgia, inducted, 1982  
Phi Beta Kappa, University of Michigan, Alpha Chapter 1978  
Deans List, University of Michigan, LSA, 1974 - 1978

### **PROFESSIONAL EXPERIENCES**

Research Faculty, Moss Landing Marine Laboratories - San Jose State University Research Foundation,  
Moss Landing, CA, 2009 - Present  
Affiliate Research Scientist, Moss Landing Marine Laboratories - San Jose State University Research  
Foundation, Moss Landing, CA, 2002 - 2009  
Research Scientist, Moss Landing Marine Laboratories - San Jose State University Research Foundation,  
Moss Landing, CA, 1999 - 2002  
Assistant Research Biologist, Step II, Department of Biology, UCLA - off campus at Hopkins Marine  
Station, Pacific Grove, CA, 1994-1999  
Assistant Research Biologist, Department of Biology, UCLA - off campus at Hopkins Marine Station,  
Pacific Grove, CA, 1992-1994  
Research Associate - Instructor, Department of Molecular Genetics and Cell Biology, University of  
Chicago - off campus at Hopkins Marine Station, Pacific Grove, CA, 1991-1992  
Research Associate, Department of Molecular Genetics and Cell Biology, University of Chicago - off  
campus at Hopkins Marine Station, Pacific Grove, CA, 1988-1991  
Lizard Island Research Station Fellow, Australian Museum, Cairns, Australia, 1987  
NSF Postdoctoral Fellow in Plant Biology, Department of Biology, UCLA, Los Angeles, CA, 1985-1987

### **RESEARCH INTERESTS**

*Physiological ecology of marine algae and microbes with focus on the molecular regulation and integration of carbon and nitrogen assimilation in marine phytoplankton.*

Specific research projects have ranged from nutrient regulation and cell biology of coral-dinoflagellate symbioses, to investigation of molecular processes contributing to activation of phytoplankton metabolism ('shift-up') during upwelling conditions and biotechnology applications with diatoms and yeast. Current research seeks to identify molecular and biochemical markers associated with production of the neurotoxin domoic acid (DA) by diatoms in the genus *Pseudo-nitzschia*. Actively developing molecular bioassays enabling identification of species actively metabolizing DA and well and genetic markers for robust enumeration of *Pseudo-nitzschia* population and community dynamics. Development and appropriate use of in-situ sensors and observational systems of sensors for continuous monitoring and forecasting of coastal ecosystem status.

**MENTORING EXPERIENCES**

Alejandro Cabello-Pasini, SUNY-Stoney Brook, Ph.D., September 1996  
 Yu Gao, University of Southern California, Ph.D., May 1997  
 Deborah L. Robertson, University of Chicago, Ph.D., June 1997  
 Timothy N. Schaeffer, Moss Landing Marine Laboratories, Committee Member, M.S., August 1999  
 Judah D. Goldberg, Moss Landing Marine Laboratories, Committee Member, M.S., September 2003  
 Nicolas C. Ladizinsky, Moss Landing Marine Laboratories, Co-advisor, M.S., December 2003  
 Meredith D. Armstrong-Howard, Univ. California, Santa Cruz, Ocean Science, Committee Member, Ph.D., September 2007  
 Chris Scianni, Moss Landing Marine Laboratories, Committee Member, M.S., May 2008  
 Amy Clark, Sacramento State University, Department of Chemistry, M.S., September 2008  
 Kendra Hayashi, Moss Landing Marine Laboratories, Co-Advisor, 2015  
 Erinn McKell, Moss Landing Marine Laboratories, Co-Advisor, 2009  
 Misty Peacock, Univ. California Santa Cruz, Ocean Science, Committee Member, Ph.D. 2010  
 Shelby Boyer-McElroy, Moss Landing Marine Laboratories, Committee Member, MS 2011  
 John Negry, Moss Landing Marine Laboratories, Committee Member, 2011  
 Jenny Q. Lane, Univ. California, Santa Cruz, Ocean Science, Committee Member, Ph.D., 2011  
 Sherry L. Palacios, Univ. California, Santa Cruz, Ocean Science, Committee Member, Ph.D., 2012  
 Brian Mauer, Moss Landing Marine Laboratories, Committee Member, MS 2012  
 Nilo Alvarado, Univ. California Santa Cruz, Ocean Science, Committee Member, MS. 2012  
 Karen Parker, Moss Landing Marine Laboratories, Committee Member, MS 2013  
 Kelene Keating, Moss Landing Marine Laboratories, Committee Member, MS 2013  
 Jeff Johnsen, Moss Landing Marine Laboratories, Committee Member, MS 2013  
 Julie Kuo, Moss Landing Marine Laboratories, Committee Member, MS 2015  
 Bruna Fernandina Sobrinho, Universidade Federal Do Paraná, Brazil. Intern 2015  
 April Woods, Moss Landing Marine Laboratories/CSUMB, Co-Advisor, MS 2016  
 Rebecca Littlefield, Clark University, MA, Committee Member, MS 2016  
 Liz Lam, Moss Landing Marine Laboratories, Committee Member, in progress  
 Holly Chiswell, Moss Landing Marine Laboratories, Committee Member, in progress  
 Stephann Bitterwolf, Moss Landing Marine Laboratories, Committee Member, in progress  
 Aaron Cristian Del Mar College TX., CSUMB-Marine REU 2016  
 Cristian Garrido Caceres, Univ. California, Santa Cruz, Ocean Sciences, Committee Member, PhD. In progress

**COMMUNITY ACTIVITIES**

MLML Center for Aquaculture, Executive Committee Member, 2015-present  
 NOAA\_NCOS Grant Review Panelist March 2015  
 CeNCOOS Shorestation Monitoring Working Group 2012- present  
 Invited Seminar Speaker, Department of Chemistry, Sacramento State University, May 2013  
 Invited Participant, West Coast Regional Harmful Algal Bloom Summit, Portland OR, February 2009  
 Executive Organizing Committee Member, ACT Workshop: Technologies and Methodologies for the Detection of Harmful Algae and Their Toxins, USF, St. Petersburg, FL, October 2008  
 Board of Directors, Alliance for Coastal Technologies, 2006 to present  
 Organizer and Session Chair with R. Kipp Shearman: "New Technologies, Instrumentation and Applications for Ocean Sciences" 53rd Eastern Pacific Ocean Conference (EPOC '06), Timberline Lodge, OR, September 2006  
 Invited Lecturer, NOAA Teacher Enhancement Workshop, MLML, Moss Landing, CA, July 2005  
 Invited Lecturer, NOAA Teacher Enhancement Workshop, MLML, Moss Landing, CA, July 2004  
 Mentor – CSUMB Marine REU Summer 2016  
 Ad Hoc reviewer for Harmful Algae, Marine Drugs, Journal of Phycology

## REFERENCES

Raphael M. Kudela,, Professor, UCSC - Ocean Sciences, kudela@ucsc.edu  
 Thomas Johengen, Senior Scientist, Univ. Michigan - CILER, Tom.Johengen@noaa.gov  
 Mario Tamburri, Research Faculty, CBL, Executive Director ACT, tamburri@cbl.umces.edu  
 Kenneth Coale, Professor - MLML, kcoale@mlml.calstate.edu  
 Nick Welschmeyer, Professor, MLML, welschmeyer@mlml.calstate.edu  
 Jim Harvey, Director – MLML, jharvey@mlml.calstate.edu

## PEER REVIEWED PUBLICATIONS

- Brunson, J.K., McKinnie, S.M.K., Chekan, J.R., McCrow, J.P., Miles, Z.D., Bertrand, E.M., Bielinski, V.A., Luhavaya, H., Oborník, M., **Smith, G.J.**, Hutchins, D.A., Allen, A.E. and Moore, B.S. 2018. Biosynthesis of the neurotoxin domoic acid in a bloom-forming diatom. *Science* 361: 1356-1358.
- Bowers,H.A.; Ryan, J.P.; Hayashi, K.; Woods,A.L.; Marin III, R.; **Smith, G.J.**; Hubbard, K.A.; Doucette, G.J.; Mikulski, C.M.; Gellene, A.G., Zhang Y.; Kudela, R.M.; Caron,D.A.; Birch, J.M.; Scholin, C.A. 2018. Diversity and toxicity of *Pseudo-nitzschia* species in Monterey Bay: perspectives from targeted and adaptive sampling. *Harmful Algae* 78:129-141.
- Ryan, J.P., Kudela, R.M, Birch, J.M., Blum, M., Bowers, H.A., Chavez, F.P., Doucette, G.J., Hayashi, K., Marin III, R., Mikulski, C.M., Pennington, J.T., Scholin, C.A., **Smith, G.J.**, Woods, A., and Zhang, Y. 2017. Causality of an extreme harmful algal bloom in Monterey Bay, California, during the 2014–2016 northeast Pacific warm anomaly. *Geophysical Research Letters* 44, doi: 10.1002/2017GL072637.
- Adams, N.G., Schwenke, P., **Smith, G.J.** and Trainer, V.L. 2017. Microsatellite markers for population genetic applications in the domoic acid-producing diatom *Pseudo-nitzschia australis* Frenguelli (Bacillariophyceae). *Protist* 168:197-205.
- Drake, L.A., Tamburri, M.N., First, M.R., **Smith, G.J.** and Johengen,T.H. 2014. How many organisms are in ballast water discharge? A framework for validating and selecting compliance monitoring tools. *Marine Pollution Bulletin* 86:122-128.
- Keeling, P., Burki, F, Wilcox, HM, Allam, B, Allen, EE, Amaral-Zettler, LA, Armbrust, EV, Archibald, JM, Bharti, AK, Bell, CJ, Beszteri, B, Bidle, KD, Cameron, CT, Campbell, L, Caron, DA, Cattolico, RA, Collier, JL, Coyne, K, Davy, SK, Deschamps, P, Dyhrman, ST, Edvardsen, B, Gates, RD, Gobler, CJ, Greenwood, SJ, Guida, SM, Jacobi, JL, Jakobsen, KS, James, ER, Jenkins, B, John, U, Johnson, MD, Juhl, AR, Kamp, A, Katz, LA, Kiene, R, Kudryavtsev, A, Leander, BS, Lin, S, Lovejoy, C, Lynn, D, Marchetti, A, McManus, G, Nedelcu, AM, Menden-Deuer, S, Miceli, C, Mock, T, Montresor, M, Moran, MA, Murray, S, Nadathur, G, Nagai, S, Ngam, PB, Palenik, B, Pawlowski, J, Petroni, G, Piganeau, G, Posewitz, MC, Rengefors, K, Romano, G, Rumpho, ME, Rynearson, T, Schilling, KB, Schroeder, DC, Simpson, AGB, Slamovits, CH, Smith, DR, **Smith, GJ**, Smith, SR, Sosik, HM, Stief, P, Theriot, E, Twary, S, Umale, PE, Vaulot, D, Wawrik, B, Wheeler, GL, Wilson, WH, Xu, Y,Zingone, A, Worden, AZ. 2014. The Marine Microbial Eukaryote Transcriptome Sequencing Project (MMETSP): Illuminating the Functional Diversity of Eukaryotic Life in the Oceans through Transcriptome Sequencing. *Plos Biology* 12: e1001889.
- McIlroy, S., **G. Smith**, and J. Geller. 2014. FISH-Flow: a quantitative molecular approach for describing mixed clade communities of Symbiodinium. *Coral Reefs* 33: 157-167.
- Tamburri, M.N, Atkinson, M.J., Buckley, E.N., Johengen, T.H., Luther, M.E., Meadows, G.A. and **Smith, G.J.** 2012. Technologies To Meet IOOS And Societal Needs. Proc. IOOS Summit. 5pp.
- Savage, T., G. Smith, A. Clark, and P. Saucedo. 2012. Condensation of the isoprenoid and amino precursors in the biosynthesis of domoic acid. *Toxicon* 59: 25-33.

- Tamburri, M. Johengen, TH, Atkinson, MJ, Schar, DWH, Robertson, CY, Purcell, H, **Smith, GJ**, Pinchuk, A, Buckley, EN. 2011. Alliance for Coastal Technologies: Advancing Moored pCO<sub>2</sub> Instruments in Coastal Waters. *Marine Technology Society Journal* **45**: 43-51.
- Kudela, R., M. Howard, B. Jenkins, P. Miller, and **G.J. Smith**. 2010. Using the molecular toolbox to compare harmful algal blooms in upwelling systems. *Progress in Oceanography* **85**: 108-121.
- Boss, E. Taylor, L, Gilbert, S, Gundersen, K, Hawley, N, Janzen, C, Johengen, T, Purcell, H, Robertson, C, Schar, DWH, **Smith, GJ**, Tamburri, MN. 2009. Comparison of inherent optical properties as a surrogate for particulate matter concentration in coastal waters. *Limnology and Oceanography-Methods* **7**: 803-810.
- Howard, M.D.A., **Smith, G.J.** And Kudela, R.M. 2009. Phylogenetic relationships of yessotoxin-producing dinoflagellates, based on the large subunit and internal transcribed spacer ribosomal DNA domains. *Appl. Environ. Microbiol.* 75: 54-63.
- Orcutt, K.M., Gundersen, K., Wells, M.L., Poulton, N., Sieracki, M.E. and **Smith, G.J.** 2008. Lighting up phytoplankton cells with quantum dots. *Limnol. Oceanogr. Methods* (2008) 6:653-658
- Litaker, R.W., Stewart, T.N., Eberhart, B-T.L., Wekell, J.C., Trainer, V.L., Kudela, R.M., Miller, P.E., Roberts, A., Hertz, C., Johnson, T.A., Frankfurter, G., **Smith, G.J.**, Schnetzer, A., Schumacker, J., Bastian, J.L., Odell, A., Gentien, P., Le Gal, D., Hardison, D.R. And Tester, P.A. 2008. Rapid enzyme-linked immunosorbent assay for detection of the algal toxin domoic acid. *J. Shellfish Res.* 27: 1301-1310.
- Kvitek, R.G., Goldberg, J.D., **Smith, G.J.**, Doucette, G.J. and Silver, M.W. 2008. Domoic acid contamination within eight representative species from the benthic food web of Monterey Bay, California, USA. *Mar. Ecol. Prog. Ser.* 367:35-47.
- Schaeffer, T.A., **Smith, G.J.**, Foster, M.S. and DeTomaso, A. 2002. Genetic differences between two growth-forms of *Lithophyllum margaritae* in Baja California Sur, Mexico. *J. Phycol.* 38:1090-1098.
- Robertson, D.L., **Smith, G.J.** and Alberte, R.S. 2001. Glutamine synthetase in marine algae: new surprises from an old enzyme. *J. Phycol.* 37: 793-795.
- Coyer, J.C., **Smith, G.J.** and Andersen, R.A. 2001. Evolution of *Macrocystis* spp. (Phaeophyceae) as determined by ITS1 and ITS2 sequences. *J. Phycol.* 37:574-585.
- Cabello-Pasini, A., Swift, H., **Smith, G.J.** and Alberte, R.S. 2001. Phosphoenolpyruvate carboxykinase from the marine diatom *Skeletonema costatum* and the phaeophyte *Laminaria setchellii*. II. Immunological characterization and subcellular localization. *Botanica Marina* 44: 199-207.
- Smith, G.J.**, Ladizinsky, N.L. and Miller, P.E. 2001. Amino acid profiles in species and strains of *Pseudo-nitzschia* from Monterey Bay California: Insights into the metabolic role(s) of domoic acid. *Harmful Algal Blooms 2000*. G.M. Hallegraeff, S.I. Blackburn, C.J. Bolch, and R.J. Lewis (eds). IOC-UNESCO pp 324-327.
- Smith, G.J.** 2000. Transport makes the difference. *J. Phycol.* 36:625-627.
- Cabello-Pasini, A, **Smith, G.J.** and Alberte, R.S. 2000. Phosphoenolpyruvate carboxykinase from the marine diatom *Skeletonema costatum* and the phaeophyte *Laminaria setchellii* I. Isolation and biochemical characterization. *Botanica Marina* 43:559-568.
- Gao, Y., **Smith, G.J.** and Alberte, R.S. 2000. Temperature dependence of nitrate reductase activity in marine phytoplankton: Biochemical analysis and ecological implications. *J. Phycol.* 36:304-313.
- Jochem, F.J., **Smith, G.J.**, Gao, Y., Zimmerman, R.C., Cabello-Pasini, A., Kohrs, D.G. and Alberte, R.S. 2000. Cytometric quantification of nitrate reductase by immunolabeling in the marine diatom *Skeletonema costatum*. *Cytometry* 39:173-178.
- Smith, G.J.** and Muscatine, L. 1999. The cell cycle of symbiotic dinoflagellates: Variation in G1 phase duration with anemone nutritional status and macronutrient supply in the *Aiptasia-Symbiodinium* symbiosis. *Mar. Biol.* 134:405-418.

- Robertson, D.L., **Smith, G.J.** and Alberte, R.S. 1999. Characterization of a cDNA encoding glutamine synthetase from the diatom *Skeletonema costatum*. J. Phycol. 35:786-797.
- Gomez-Chiarri, M., **Smith, G.J.**, de la Fuente, J., and Powers, D.A. 1998. Gene transfer in shellfish and algae. *In: Gene Transfer in Aquatic Organisms*. Castro, F. and de la Fuente, J. (eds.) RG Landers Press. pp 107-125.
- Smith, G.J.**, Gao, Y. and Alberte, R.S. 1997. The fucoxanthin chlorophyll *a/c* proteins comprise a large family of co-expressed genes in the diatom *Skeletonema costatum*: (Greve) Characterization of 8 unique cDNAs (Accession Nos: U66169-U66180) [[PGR97-099](#)]. Plant Physiol. 114:1136.
- Gao, Y. **Smith, G.J.** and Alberte, R.S. 1993. Nitrate reductase in the marine diatom *Skeletonema costatum*: biochemical and immunological characterization. Plant Physiol. 103:1437-1445.
- Smith, G.J.**, Zimmerman, R.C. and Alberte, R.S. 1992. Molecular and physiological responses of diatoms to variable levels of irradiance and nitrogen availability. I. Growth of *Skeletonema costatum* in simulated upwelling conditions. Limnol. Oceanogr. 37:989-1007.
- Gao, Y., **Smith, G.J.** and Alberte, R.S. 1992. Light regulation of nitrate reductase in *Ulva fenestrata* (Chlorophyceae): I. The influence of light regimes on nitrate reductase activity. Mar. Biol. 112:691-696.
- Smith, G.J.** and Alberte, R.S. 1991. Characterization of photosystem I associated polypeptides from the chlorophyll *b*-enriched alga *Tetraselmis* spp. (Prasinophyceae) and other chlorophyte algae. J. Phycol. 27:91-100.
- Hoegh-Guldberg, O. and **Smith, G.J.** 1989. Influence of the population density of zooxanthellae and supply of ammonium on the biomass and metabolic characteristics of the reef corals *Seriatopora hystrix* and *Stylophora pistillata*. Mar. Ecol. Prog. Ser. 57:173-186.
- Hoegh-Guldberg, O. and **Smith, G.J.** 1989. The effect of sudden changes in temperature, light and salinity on the density and export of zooxanthellae from the reef corals *Stylophora pistillata* Esper and *Seriatopora hystrix* Dana. J. Exp. Mar. Biol. Ecol. 129:279-303.
- Weis, V.M., **Smith, G.J.** and Muscatine, L.. 1989. A "CO<sub>2</sub>-Supply" mechanism in zooxanthellate cnidarians: role of carbonic anhydrase. Mar. Biol. 100:195-202.
- Smith, G.J.** 1988. The influences of host ontogeny and nutritional status on zooxanthellae population density and growth rate Endocyt. C. Res. 5:125-131.
- Smith, G.J.** and Muscatine, L. 1986. Carbon budgets and regulation of the population density of symbiotic algae. Endocyt. C. Res. 3:213-238.
- Smith, G.J.** 1986. Ontogenetic influences on carbon flux in adult and juvenile polyps of the sea anemone *Aulactinia stelloides* (Anthozoa: Actiniaria) and their endosymbiotic algae. Mar. Biol. 92: 361-370.
- Dallmeyer, D., Porter, J., and **Smith, J.**, 1982. The effects of particulate peat on the behavior and physiology of the Jamaican reef-building coral *Montastrea annularis*. Mar. Biol. 68: 229-233.
- Szmant-Froelich, A., Johnson, V., Hoehn, T., Battey, J., **Smith, J.**, Fleischmann, E., Porter, J., and Dallmeyer, D.. 1982. The physiological effects of oil-drilling muds on the Caribbean coral *Montastrea annularis*. Proc. 4th Intn'l Symp. Coral Reefs. 1: 163-168.
- Porter, J.W., Battey, J.F. and **Smith, G.J.** 1982. Perturbation and change in a coral reef community. PNAS 79: 1678-1681.
- Porter, J.W., Woodley, J.D., **Smith, G.J.**, Neigel, J.E. Battey, J.F. and Dallmeyer, D.G.. 1981. Population trends among Jamaican reef corals. Nature 294:249-250.

## **WORKSHOP REPORTS**

– either primary **author** and/or **editor** of reports listed, in addition to serving as organizer, host and facilitator of these workshops hosted by ACT – Pacific Coast. Reports available at [www.act-us.info/workshops.php](http://www.act-us.info/workshops.php)

- ACT-WS01-17. 2017. Sensors for monitoring of harmful algae, cyanobacteria and their toxins. H.A.Bowers, [au] G.J. Smith [ed]. [UMCES] CBL 2017-65.
- ACT-WS03-11. 2011. Sampling the aquatic environment: Technologies for sample concentration, remote sampling and sample return. G.J.Smith [au]. [UMCES] CBL.
- ACT-08-02. 2008. Technologies and methodologies for detection of harmful algae and their toxins. G. J. Smith [au] and S. Gilber [ed]. [UMCES]CBL08-143. 35pp.
- ACT-07-01. 2007. Towed vehicles: Undulating platforms as tools for mapping coastal processes and water quality assessment. G. J. Smith [au] and R. Burt [ed]. [UMCES]CBL 07-143. 32pp.
- ACT-06-02. 2006. Optical remote sensing of coastal habitats. G. J. Smith [au], C.O. Davis and R. Kudela [eds]. [UMCES]CBL 07-043. 36pp.
- ACT-05-06. 2005. Trace metal sensors for coastal monitoring. G. J. Smith [au] and K. Coale [ed]. [UMCES]CBL 05-108. 27pp.
- ACT-04-06. 2004. Acoustic remote sensing technologies for coastal imaging and resource assessment. G.J. Smith and G. Greene [au, ed]. UMCES Technical Report Series: TS-464-04-CBL, Ref No. [UMCES]CBL 04-135. 27pp.
- ACT-03-04. 2003. Rapid microbiological indicator methods. S. Weisberg, J. Griffith and R. Noble [au], G. J. Smith [ed]. UMCES Technical Report Series: TS-417-03-CBL, Ref No. [UMCES]CBL 03-329. 48pp.

## **TECHNICAL REPORTS**

– multi-authored, anonymous instrument performance verification summaries; in addition specific provided design and conduct of controlled laboratory evaluations, managed field verification team at MLML, lead data analysis and presentation design, products reviewed by science advisory panel and participating company representatives. Reports available at [www.act-us.info/evaluations.php](http://www.act-us.info/evaluations.php)

### In situ optical dissolved oxygen sensors – 2016

- ACT VS16-01. 2016. Performance verification statement for the JFE AROUSB and AROW-USB dissolved oxygen sensors. UMCES Technical Report Series: Ref No [UMCES] CBL 2016-010. 73pp.
- ACT VS16-02. 2016. Performance verification statement for the Precision Measurement Engineering miniDOT dissolved oxygen sensors. UMCES Technical Report Series: Ref No [UMCES] CBL 2016-011. 59pp.
- ACT VS16-03. 2016. Performance verification statement for the Sea-Bird Scientific HydroCAT dissolved oxygen sensors. UMCES Technical Report Series: Ref No [UMCES] CBL 2016-012. 53pp.
- ACT VS16-04. 2016. Performance verification statement for the HOBO U26 dissolved oxygen sensors. UMCES Technical Report Series: Ref No [UMCES] CBL 2016-013. 57pp.
- ACT VS16-05. 2016. Performance verification statement for the Hach Hydrolab DS5X and HL4 dissolved oxygen sensors. UMCES Technical Report Series: Ref No [UMCES] CBL 2016-014.
- ACT VS16-06. 2016. Performance verification statement for the XYLEM EXO2 dissolved oxygen sensor. UMCES Technical Report Series: Ref No [UMCES] CBL 2016-015.
- ACT VS16-07. 2016. Performance verification statement for the In-Situ Troll 9000 Rugged dissolved oxygen sensor. UMCES Technical Report Series: Ref No [UMCES] CBL 2016-016.

### In situ pH sensors – 2015

- ACT VS15-01. 2015. Performance verification statement for the Campbell Scientific Instruments pH sensor. UMCES Technical Report Series: Ref No [UMCES] CBL 2015-008. 59pp.

- ACT VS15-02. 2015. Performance verification statement for the Eureka Manta2 pH sensor. UMCES Technical Report Series: Ref No [UMCES] CBL 2015-009. 47pp.
- ACT VS15-03. 2015. Performance verification statement for the Idronaut 305 Plus CTD pH sensor. UMCES Technical Report Series: Ref No [UMCES] CBL 2015-010. 57pp.
- ACT VS15-04. 2015. Performance verification statement for the In-Situ Troll 9500 pH sensor. UMCES Technical Report Series: Ref No [UMCES] CBL 2015-011. 58pp.
- ACT VS15-05. 2015. Performance verification statement for the Satlantic SeaFET pH sensor. UMCES Technical Report Series: Ref No [UMCES] CBL 2015-012. 48pp.
- ACT VS15-06. 2015. Performance verification statement for the Sunburst SAMI-pH sensor. UMCES Technical Report Series: Ref No [UMCES] CBL 2015-013. 63pp.
- ACT VS15-07. 2015. Performance verification statement for the Xylem EXO2 pH sensor. UMCES Technical Report Series: Ref No [UMCES] CBL 2015-014. 73pp.

#### In situ hydrocarbon sensors – 2011

- ACT VS12-01. 2012. Performance verification statement for the Chelsea UV Aquatracka Hydrocarbon Fluorometer. UMCES Technical Report Series: Ref No [UMCES]CBL 2013-014. 46pp.
- ACT VS12-02. 2012. Performance verification statement for the Chelsea UViLux Hydrocarbon and CDOM Fluorometers. UMCES Technical Report Series: Ref No [UMCES]CBL 2013-015. 58pp.
- ACT VS12-03. 2012. Performance verification statement for the Turner C3 Fluorometer. UMCES Technical Report Series: Ref No [UMCES]CBL 2013-020. 73pp.
- ACT VS12-04. 2012. Performance verification statement for the HACH FP 360 sc UV Fluorometer. UMCES Technical Report Series: Ref No [UMCES]CBL 2013-018. 44pp.
- ACT VS12-05. 2012. Performance verification statement for the WETLabs ECO FLCD(RT)D-1929 Fluorometer. UMCES Technical Report Series: Ref No [UMCES]CBL 2013-021. 43pp.

#### Performance Demonstrations of in situ pCO<sub>2</sub> analyzers - 2009

- ACT DS01-10. 2010. Performance demonstration statement for the Contros HydroC/CO<sub>2</sub>. UMCES Technical Report Series: Ref No [UMCES]CBL 10-091. 24pp.
- ACT DS02-10. 2010. Performance demonstration statement PMEL MAPCO<sub>2</sub> / Battelle Seaology pCO<sub>2</sub> monitoring system. UMCES Technical Report Series: Ref No [UMCES]CBL 10-092. 24pp.
- ACT DS03-10. 2010. Performance demonstration statement Pro-Oceanus Systems Inc. PSI CO<sub>2</sub>-Pro. UMCES Technical Report Series: Ref No [UMCES]CBL 10-093. 24pp.
- ACT DS04-10. 2010. Performance demonstration statement Sunburst Sensors SAMI-CO<sub>2</sub>. UMCES Technical Report Series: Ref No [UMCES]CBL 10-094. 26pp.

#### In situ conductivity sensors for salinity monitoring – 2008

- ACT VS01-09. 2009. Performance verification statement for the Aanderaa Data Instruments' 4319B conductivity sensor. UMCES Technical Report Series: Ref No [UMCES]CBL 09-028. 62pp.
- ACT VS02-09. 2009. Performance verification statement for Campbell Scientific CS547A and OBS-3A salinity probes. UMCES Technical Report Series: Ref No [UMCES]CBL 09-029. 64pp.
- ACT VS03-09. 2009. Performance verification statement for the FSI NXIC-CTD-BIO-AUTO salinity sensor. UMCES Technical Report Series: Ref No [UMCES]CBL 09-030. 64pp.
- ACT VS04-09. 2009. Performance verification statement for the Greenspan EC3000 conductivity sensor. UMCES Technical Report Series: Ref No [UMCES]CBL 09-031. 62pp.
- ACT VS05-09. 2009. Performance verification statement for the In-Situ Inc. Aqua TROLL 200 Sonde. UMCES Technical Report Series: Ref No [UMCES]CBL 09-032. 62pp.
- ACT VS06-09. 2009. Performance verification statement for the JFE ALEC CTW and CTW-FS salinity sensors. UMCES Technical Report Series: Ref No [UMCES]CBL 09-033. 62pp.
- ACT VS07-09. 2009. Performance verification statement for the RBR XR-420 and XR-620 CTD salinity sensors. UMCES Technical Report Series: Ref No [UMCES]CBL 09-034. 64pp.

ACT VS08-09. 2009. Performance verification statement for the YSI 6-series sonde with model 6560 salinity sensor. UMCES Technical Report Series: Ref No [UMCES]CBL 09-035. 64pp.

*In situ nutrient analyzers and sensors* - 2007 ACT's first technology demonstration project

ACT-DS01-08. 2008. Performance Demonstration Statement *American Ecotech NUT 1000*. UMCES Technical Report Series: Ref No. [UMCES]CBL 08-040. 20pp.

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