

## CURRICULUM VITAE

GEOFFREY IVAN SCOTT

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### EDUCATION

*PhD.* 1979. Marine Science, University of South Carolina (USC), Columbia, SC.

Dissertation: The Effects of Seasonal Chronic Chlorination on the Growth, Survival, and Physiology of the American Oyster, *Crassostrea virginica* (Gmelin).

*M.S.* 1976. Marine Science, USC, Columbia, SC

Thesis: Oyster Condition Index as a Monitor of Biological Pollution in South Carolina Coastal Waters: A Pilot Study.

*B.S.*, 1974. Biology, Wofford College, Spartanburg, SC

### RESEARCH EXPERIENCE:

**2014- Present:** Clinical Professor and Chair, Department of Environmental Health Sciences, Arnold School of Public Health, University of South Carolina

**2001-2014:** Center Director, Center for Coastal Environmental Health & Biomolecular Research (CCEHBR) with Laboratories in Charleston, SC and Oxford, MD

US Department of Commerce, National Oceanic & Atmospheric Administration, National Ocean Service  
219 Ft. Johnson Road; Charleston, SC 29412-9110

**2009-2011** – Acting Director, Hollings Marine Laboratory (HML)

US Department of Commerce, National Oceanic & Atmospheric Administration, National Ocean Service  
221 Ft. Johnson Road; Charleston, SC 29412-9110

**1995-2001:** Branch Chief Marine Ecotoxicology Branch

US Department of Commerce, National Oceanic & Atmospheric Administration, National Ocean Service  
Center for Coastal Environmental Health & Biomolecular Research  
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**1990-1995:** Program Leader, Toxicology Program

US Department of Commerce, National Oceanic & Atmospheric Administration, National Ocean Service  
Center for Coastal Environmental Health & Biomolecular Research  
219 Ft. Johnson Road; Charleston, SC 29412-9110

**1984-1990:** Associate (Tenured) Professor

Arnold School of Public Health, Department of Environmental Health Sciences, University of South Carolina  
Columbia, SC 29208

**1980-1984:** Director Toxicology Program  
Wide Awake Landing Laboratory  
Research Planning Institute  
Columbia, SC 29208

**1975-1980:** Aquatic Toxicologist  
U.S. EPA  
Bears Bluff Field Station  
Wadmalaw Island, SC 29487

### **ACADEMIC AFFILIATION**

- Professor, Marine Biomedicine & Environmental Science Program, Medical Univ. of South Carolina, Charleston, SC.
- Associate Professor, Marine Biology Program, University of Charleston, Charleston, SC.
- Tenured Associate Professor (1990) and Adjunct Professor, Arnold School of Public Health, University of South Carolina, Columbia, SC.
- Adjunct Associate Professor, The Institute of Human and Environmental Health, Texas Tech. Univ.; Lubbock, TX

### **PROFESSIONAL SCIENTIFIC MANAGEMENT EXPERIENCE**

As current Chair of the Department of Environmental Health Sciences I oversee a faculty of > 40 graduate students (28PhDs and 14 MPH/MS students), 13 PhD faculty members, which include toxicologists, environmental microbiologist, molecular biologist, chemist, GIS scientists and exposure scientist. Also our Smart State Center for Environmental Nanomaterials Risk reports through our Department and has several visiting faculty from around the world at any given time. The Arnold School of Public Health produces the 6<sup>th</sup> largest number of PhD scientists among the current 54 schools of public health in the US.

As former Director of one of five NOAA/NOS Research Centers within the National Centers of Coastal Ocean Science, I directly manage and supervise a staff of more than 100 staff including 75 scientists (more than 50 PhDs) at our CCEHBR Center Laboratories in Charleston, SC (92 staff) and Oxford, Maryland [Cooperative Oxford Laboratory (COL) >50 staff including NOAA, US Coast Guard and MD Department of Natural Resources]. While Acting Director of both CCEHBR and HML in 2008-2011, I managed the facility and research for an additional 150 HML staff including researchers from NOAA, MUSC, the College of Charleston, the National Institute of Standards and Technology and the SC Department of Natural Resources. Center Director responsibilities include every aspect of the Center including **Directing Scientific Research** - including strategic planning, implementation and execution;

**Fiscal Management** - including budget reporting, planning and execution for federal budgets and reimbursable funding from other agencies (NSF, EPA, USGS, DOD, ACE, ONR); **Personnel Management** – including Federal employees and contract staff from three different contracting companies for IT, scientific support and administrative and facility support; **Facility Oversight** – supervision of two facility engineers including operations, upkeep, and construction; **Safety and Environmental Management Systems** (EMS = Federal Sustainability Programs) – Supervision of 3 safety officers; **Community/Regional Interactions** and **Political/Congressional/ Office of Management and Budget Interactions**.

**Direction of Scientific Research** – My role in research leadership is to provide the Direction and Vision for strategically aligning our research capabilities with research opportunities through partnership and leveraging, both within and outside of NOAA. I have developed an extensive network of research interactions and professional contacts over the years, which I work with in addressing national environmental issues, which includes a coalition of federal, and state agencies, academia, business and NGOs. This type of coalition is important in addressing environmental issues as it keeps you grounded in the science, technology and policy aspects of issues. This also allows for optimum funding and research opportunities by this type of alliance (government-business-academia- NGOs). I oversee research in 4 major focal areas – Harmful Algal Blooms (HABs), Coastal Pollution, Climate Change and Ecosystem Health Assessments for Coastal Ecosystem Management. Evidence of the outstanding nature of these 4 major research focus areas at CCEHBR is indicated in the numerous publications and by the number of research awards by scientists within these 4 programs as the 4 Branch Leads (Drs. John Ramsdell, Mike Fulton and Jeff Hyland) in these research areas have won the highest awards from NOAA (Administrators Award) and US Dept. of Commerce (Gold Medal) in the past 3 years (see Awards Section). In addition, we have had one of our USC Graduate Students (Dr. Heath Kelsey) win the Walter B. Jones Award from NOAA recognizing the most outstanding coastal and marine graduate research in the US and have had more than 6 of our graduate student win NOAA's Post-Doctoral John Knauss NOAA Fellowships over the past 4 years.

**Fiscal Management** – Fiscal Management at CCEHBR includes management of annual federal appropriations that have ranged from \$11.4M – \$22.3M including funding at CCEHBR, HML and COL. For CCEHBR annual federal funding for 2007-2013 has ranged from \$7.7M (Sequestration) – \$14.8M (see Table below). In addition, extramural competitive funding for CCEHBR from other Federal Agencies, Private Foundations and State Agencies has annually ranged from \$0.453M to \$3.6M (2005 – not depicted in Table), with FY 13 funding of \$2.49M for CCEHBR and \$2.5M for HML. The largest single award was \$1.9M from DOD in 2011 for Coral Health Disease and Ecotoxicology Research with ammunition pollutants. ***The 2013 budget is \$7.7M of direct federal appropriations and \$2.49M in extramural funding for CCEHBR and \$2.50M for HML, which is included due to CCEHBR's substantial involvement with NIST and Deepwater Horizon Oil Spill funding at HML (Toxicology, Chemistry and field work support at CCEHBR)***. Please note that our annual enacted funding has been larger than what the President or Congress initially directed, which indicates how we have been able to successfully work with Congress, Partners and NOAA to get our funding levels increased each year.

***Historical Funding 2007-2013 for CCEHBR Charleston (\$Million)***

	FY 2007		FY 2008		FY 2009		FY 2010		FY 2011		FY 2012		FY 2013	
	Req.	Enact	Req.	Enact	Req.	Enact	Req.	Enact	Req.	Enact	Req.	Enact	Req.	Enact
CCEHBR/ Charleston	\$8.3	\$14.8	\$8.3	\$13.7	\$11.3	\$11.5	\$10.6	\$11.3	\$11.3	\$11.3	\$8.85	\$9.3	\$36.04*	\$7.7
Incoming extramural	\$1.5		\$1.3		\$0.5		\$1.54		\$1.317		\$0.705		\$2.490 <sup>A</sup> \$2.500 <sup>B</sup>	

\*In FY13 CCEHBR budget line was consolidated by Congress with the NCCOS budget line.

<sup>A</sup> = External Funding CCEHBR

<sup>B</sup> = External Funding HML

**Personnel Management** – Direct Supervision and Management of 63 FTEs throughout our Center’s Laboratories in Charleston, SC (46) and Oxford, MD (see Table below). This includes development of Performance Plans and training as well award nominations for outstanding research and administrative accomplishments. From 2007-2013, we have managed anywhere from 23 (2013) -90 (2007) contractors each year and a total staff size (federal FTEs and contractor staff) ranging from 69 - 137. Contractors are managed through coordination with an On Site Manager for Jordan Howards Technology for administrative, technical and scientific staff (n= 17) and with Aster IT for IT contractors (n=6) in 2013.

CCEHBR	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
FTE	47	44	45	45	52**	52	46
Contractor	90	71	56	37	35	35	23
<b>TOTAL</b>	<b>137</b>	<b>115</b>	<b>115</b>	<b>82</b>	<b>87</b>	<b>87</b>	<b>69</b>

\*\*FTE terms added while contract staff further reduced.

**Facility Oversight** – As CCEHBR Center Director I Supervise a complex staff of both Federal and state employees who maintain our complex research functions throughout our 50,000 sq. ft. Center including BS2 labs for chemistry, toxicology, and microbiology as well as an NMR Center, Coral Reef Mesocosm Facility, Salt Marsh Mesocosm Facility, Rodent/Small Mammal Rearing and Dosing Facility, Marine Mammal Autopsy Facility, and Marine Forensic Laboratory. Within these laboratories there are host of ventilation systems and hoods, freezers, autoclaves, culture rooms, incubators, scintillation counters, centrifuges, thermal cyclers, robotic riboprinters, clean rooms, and other complex research equipment (e.g. HPLC-MS, MS-MS, GC-MS) with highly specialized facility requirements. We house several IT servers including a highly specialized law enforcement server for our Marine Forensic Program which supports 80% of all DNA analysis for prosecution of fishery fraud cases through the Magnuson-Stephens Act. At CCEHBR, I have overseen more than \$4M in new construction including pier and seawater systems, Marine Biotxin Laboratory, and Geothermal HVAC Systems, the Salt Marsh Mesocosm Facility, and the Coral Reef Mesocosm Facility. While on the HML Science Board I worked to design and construct with the HML Director > \$42M in construction including an NMR Facility. While Acting Director at HML I also

oversaw 4 BSL3 Labs, Clean Rooms for the NIST, the Marine Genomics Center for the SC Center of Excellence in Marine Genomics and Bioinformatics and Sea Turtle Autopsy Facility and completion of more than \$10M in construction. Also, I oversaw a process that both detected design flaws in the final research and office wing at HML that had major seismic structural flaws and moved staff to other buildings during the design and reconstruction at HML, with no cost to the Federal Government since the problems were detected during the warranty period. I also oversee a fleet of boats including 5 small boats in Charleston ranging in size 19 - 27 ft. and one 55 ft. vessel the RV LAIDLAY, a former presidential yacht, in the Chesapeake Bay, which was replaced in 2013 with a new 55 ft. Coast Guard vessel.

### **PERSONAL RESEARCH INTERESTS**

My personal research interest has focused on the effects of urban and agricultural nonpoint source runoff on estuarine ecosystem health. This has included research which has assessed both the lethal and sublethal effects of chemical contaminants and methods to discern impacts from ecosystem process changes (e.g. non contaminant stressors such as salinity, hydrography, etc.) versus chemical contaminant effects. One of the primary objectives of our research is to determine the relationship between present regulatory requirements, such as the 96h LC50 value or sediment quality guidelines determined in laboratory toxicity tests to mortality rates measured in field toxicity tests and from biomonitoring of field populations. Additional research interest has focused on developing estuarine mesocosm testing units which serve as a bridge between linking field and laboratory effects. Over the past few years we have conducted research on the organochlorine insecticide, endosulfan, nanomaterials (gold and silver), the Deep Water Horizon Oil Spill and the triazine herbicide, atrazine as well as an emerging new insecticide, fipronil. These chronic mesocosm experiments provide an excellent opportunity for graduate student research as the contaminant dosing and physical upkeep of the systems is maintained by NOAA staff. This allows for graduate student research which may focus on a variety of ecological levels (e.g. cellular to population level) which has lead to national awards for our students (e.g. Outstanding Graduate Student Research Award - Pelston Workshop on Contaminants of Emerging Concern). We are now evaluating the effects of certain chemicals to lower upper thermal limits of marine organisms in combination with pesticide exposure, which may have significant implications in terms of global warming by affecting the geographical distribution of marine organisms and we have developed a Climate Vulnerability Tool that can predict ecosystem sensitivity to changes in temperature. In addition, research is focusing on the release of legacy chemicals from global ice melts in polar regions and potential effects on boreal ecosystems.

Another real cornerstone of our ecotoxicology research has been the long term data base we have developed on the grass shrimp, *Palaemonetes pugio*, which is the most abundant macropelagic organism found in salt marsh tidal creeks, accounting for > 56% of the total abundance on an annual basis. We have developed a regional wide monitoring network of sampling stations located at NOAA National Estuarine Research Reserves and Sanctuary Sites throughout the southeastern U.S. which can be used as reference sites for researchers and in collaborative studies. In addition, the grass shrimp is our primary bioassay organism and we have been able to correlate impacts between grass shrimp with laboratory, mesocosm and field toxicity data. We have successfully developed GIS Land Use-

Contaminant-Grass Shrimp Population models for North Inlet, Murrells Inlet, Charleston Harbor and the Ace Basin regions of SC. Current research is investigating the effects of pharmaceuticals on grass shrimp including antibiotics (acute and chronic toxicity as well as effects on gut microbial fauna) and cholesterol lowering drugs (acute and chronic sublethal effects).

A final area of research interest is the development of analytical methods to differentiate human versus animal sources of pollution and the study of antibacterial resistance in marine bacteria. Previous source tracking methods have included Pulsed Field Gel Electrophoresis, ribotyping, and Multiple Antibiotic Resistance whereas newer methods include Coliphage Typing, Norovirus and Enterovirus (QPCR), and novel indicator bacteria - Bacteriodes and *Methanobrevibacter smithii* as well as Integrative modeling, forecasting and analysis. This research involves researchers at Virginia Tech University, the University of Florida, Delaware State University, the University of South Carolina, the University of North Carolina, the Southern California Coastal Water Research Program, the Medical University of South Carolina, the Interstate Shellfish Sanitation Program, the U.S. Department of Agriculture, EPA and NOAA labs in Seattle, WA, Oxford, MD and Miami, FL. Pharmaceutical drugs and home health care products are discharged into the environment at a rate of 0.1-0.3 lbs/person/year in the U.S. and the environmental risks of these products include the introduction of antibiotic resistant strains of bacteria. Our research indicates that 1-3% of *E. coli* bacteria in surface water samples of SC have Multiple Antibiotic Resistance (MAR). In other regions of the U.S., *E. coli* MAR levels may be as high as 25%. More than 39% of the dolphins in Charleston Harbor house antibiotic resistant *E. coli* within their digestive tracts, indicating high levels in mammalian models that reside in the waters and eat seafood every day. We have developed innovative methods to assess the rates of MAR and have integrated that approach with innovative molecular methods to identify resistance genes in the environment and assess antibiotic resistance risks within coastal ecosystems.

**PUBLICATIONS** (151 Total includes 23 Major National Reports and 128 Peer Reviewed Journal Articles)

**Scott, G. I.**, D.E. Porter, S. Norman, C. H. Scott, M. Uyaguari, K. A. Maruya, S. B. Weisberg, M. H. Fulton, E. F. Wirth, J. Moore, P. L. Pennington, D. Schlenck, N. D. Denslow, G. Cobb 2016. Antibiotics as CECs: An Overview of the Hazards Posed by Antibiotics and Antibiotic Resistance. Submitted to *Frontiers in Marine Science*: Accepted for Publication and In Press.

**Scott, G.I.**, M.H. Fulton, G. T. Chandler, A.F Holland, P. S. Sandifer , M. A. Reiter, and D. Porter. 2016. Global warming and coastal development: A recipe for disaster. In preparation.

Brooks, B.W., J. M. Lazorchak, M.D.A. Howard, M-V. V. Johnson, S.L. Morton, D. A. K. Perkins, E. E. Reavie, **G. I. Scott**, S.A. Smith and J. A. Steevens.2016. Are Harmful Algal Blooms becoming the greatest inland water quality threat to public health and aquatic ecosystems. *Env. Toxicology and Chemistry* 36: 6-13.

Henderson, H. C., J. Hong, D. B. Friedman, D. E. Porter, A. C. Halfacre, **G. I. Scott**, and J. R. Lead. 2016. A content analysis of Internet resources about the risks of seafood consumption. *International Journal of Environmental Health Research*, DOI: [10.1080/09603123.2015.1135313](https://doi.org/10.1080/09603123.2015.1135313).

Wickliffe, L., D.E.Porter, J. Hibbert, **G. I. Scott** and C. Marsh. 2016. Development of a geospatial guide for responsible residential pesticide application within the South Carolina coastal zone. *Southeastern Geographer*: Accepted In press.

Friedman, D. B., C. Toumey, D.E. Prter, J Hong, **G. I. Scott** and J. R. Lead. 2015. Communicating with the public about environmental health risks: a community engagement approach to dialogue about metal speciation and toxicity. *Environmental International* 74(2015): 9-12.

Gooch Moore, J., A. Ruple, K. Ballenger-Bass, S. Bell, P. L. Pennington and **G. I. Scott**.2014. Snapshot of *Vibrio parahaemolyticus* densities in open and closed shellfish beds in Coastal South Carolina and Mississippi. *Environ Monit Assess* 186:7949–7960.

Friedman,D. B., C. Toumey,D. E. Porter,J. Hong, **G. I. Scott**, and J. R. Lead .2014. A Community-Engaged Approach to Dialogue about Metal Speciation and Toxicity. *Environment International: In Press*

Fulton, M. H., P. L. Pennington, M.E. De Lorenzo and **G. I. Scott**. 2014. The use of mesocosms to assess impacts of legacy and emerging contaminants in estuarine ecosystems. *Env. Toxicology and Chemistry*: In Press.

Ellis, J.H., D. B. Friedman, R. Puett, **G.I. Scott**, and D. E. Porter.2014. A qualitative exploration of fishing and fish consumption in the Gullah/Geechee culture. *Journal of Community Health* [Epub ahead of print] PMID: 24737279.

Bailey, J. E., D. Schlenk, K. B. Delclos, M. Ehrich, S. Klaine, M. Sandy, R. Denver, R. Grant, N. Horseman, J. Kerby, J. Leonard, D. MacLatchy, E. Perkins, L. Reid, K. Roby, **G.I. Scott**, D. Selvage, and T. Schultz.2013..A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding: Weight-of-Evidence: Evaluating Results of Endocrine Screening Program Tier 1 Screening, US EPA FIFRA Scientific Advisory Panel Meeting, Environmental Protection Agency Conference Center, One Potomac Yard, Arlington, VA, SAP Minutes No. 2013-05: 59pp (July, 2013): In review EPA Science Advisory Panel -FIFRA and the Endocrine Disruptors Chemicals (EDC) Monitoring Program.

Burns, J. M., P. L Pennington, P. Sisco, R. Frey, S. Kashiwada, M. H. Fulton, **G. I. Scott**, A. W. Decho, C. J. Murphy, T. J. Shaw and J. L. Ferry. 2013. Is surface charge condition the controlling factor in predicting the distribution of nanomaterials in estuarine environments ? *Env. Science and Technology* 47 (22), pp 12844–12851.

Fulton, M. H., P. L. Pennington, M.E. De Lorenzo and **G. I. Scott**. 2013. The use of mesocosms to assess impacts of legacy and emerging contaminants in estuarine ecosystems. In Internal Review: NOAA CCEHBR. To be submitted to *Env. Toxicology and Chemistry*.

Jenkins Jr., F., D. Schlenk, M. S. Sandy, K. B. Delclos, M. F. Ehrich, S. J. Klaine, J.L. McManaman, S. Green, N. D. Horseman, J. Leonard, D. MacLatchy, R. Patino, A. Piersma, K. F. Roby, **G. I. Scott**, D. Selvage, T. W. Schultz, and D. Tillitt. 2013. A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding: Endocrine Disruptor Screening Program (EDSP) Tier 1 Screening Assays and Battery Performance, US EPA FIFRA and the Endocrine Disruptors Chemicals (EDC) Monitoring Program Scientific

Advisory Panel Meeting, Environmental Protection Agency Conference Center, One Potomac Yard, Arlington, VA: 58 pp. (May, 2013).

Jenkins, P., **G. I. Scott**, E. D. Strozier, S. Sivertsen and A. Dias. 2013. General physiological responses of the oyster, *Crassostrea virginica*, exposed to managed and unmanaged agricultural nonpoint source runoff in estuarine ecosystems. Submitted to *Aquatic Toxicology*: In review.

Kelsey, R. H., **G. I. Scott**, D. E. Porter, D. Edwards, T. C. Siewicki. 2013. Summary of results for stormwater pond fecal coliform removal efficiency study at Chechessee Creek Club, Beaufort County, SC. Submitted to *Journal of Applied Env. Microbiology*: In Review.

Matten, S.R., D. Schlenk, M. S. Sandy, K. B. Delclos, M. F. Ehrich, S. J. Klaine, J.L. McManaman, G. Bentley, V. Blazer, M. C. Christman, R. Denver, J. Freeman, D. E. Johnson, S. Kullman, J. P. McCarty, Reynaldo Patiño, E. J. Perkins, C. R. Propper, Colin G. Scanes, K. M. Portier, **G. I. Scott**, and S. Tuberty. 2013. A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding: Proposed Endocrine Disruptor Screening Program (EDSP) Tier 2 Ecotoxicity Tests US. EPA FIFRA Scientific Advisory Panel Meeting, One Potomac Yard, Arlington, Virginia, SAP Minutes No. 2013-04: 129pp. (June, 2013): In review EPA Science Advisory Panel -FIFRA and the Endocrine Disruptors Chemicals (EDC) Monitoring Program.

Muraya, K. A., D. Schlenck, P. D. Anderson, N. D. Denslow, J. E. Drewes, A. W. Oliviera, **G. I. Scott** and S. A Snyder. 2013. An adaptive, comprehensive monitoring strategy for Chemical Contaminants of Emerging Concern (CECs) in California Aquatic Ecosystems. *Integrated Environmental Assessment and Management (IEAM)*: 10/2013; DOI:10.1002/ieam.1483

Reiter, M.A., G. C Matlock, J. H. Gentile, M. A. Harwell, R. Kelty, J. Barko, S. Baker and **G. I. Scott**. 2013. An integrated framework for informing coastal and marine ecosystem management decisions. *Journal of Env. Assessment Policy and Management* 15: 135003-1-21.

**Scott, G. I.**, M. H. Fulton, M. E. DeLorenzo, E. F. Wirth, P. B Key, P.L. Pennington, D. Kennedy, D. Porter, G. T. Chandler, and C. H. Scott. 2013. The Environmental Sensitivity Index and Oil and Hazardous Materials Impact Assessments: Linking Pre-spill Contingency Planning and Ecological Risk Assessment. *Coastal and Estuarine Research* 69: 100-113.

Uyaguari, M. I., **G. I. Scott**, and R. S. Norman. 2013. Anthropogenic influence on integron abundance in coastal estuarine ecosystems. *Marine Pollution Bulletin, Volume 76, Issues 1–2:77-84*.

White House, Office of Science & Technology – Interagency Biosurveillance Science and Technology (BS &T) Working Group (WG). 2013. Co- Author with Dr. Glenn Dowling (US DOD Ft. Dietrick) on Chapter on Detecting the Biological and Chemical Threats: Final Report completed in March, 2013: 49pp. + Appendices.

Anderson, P., N. Denslow, J. E. Drewes, A. Olivieri, D. Schlenk, **G. I. Scott**, and S. Snyder. 2012. Recommendations of a Science Advisory Panel on a Monitoring Strategies for Chemicals of Emerging



Concern (CECs) in California's Aquatic Ecosystems. California Water Resources Control Board, Southern California Coastal Water Research Project, Costa Mesa, CA; Technical Report 692: 229 pp.

Cleveland, D., S.E. Long, P. L. Pennington, E. Cooper, M. H. Fulton, **G. I. Scott**, E. Petersen, T. Brewer, J. Davis, and L Wood. 2012. Pilot estuarine mesocosm study on the environmental fate of silver nanomaterials leached from consumer products. *Science of the Total Environment* 421-422: 267-272.

Portier , K. M., J. E. Chambers, S. R. Matten, M. S. Sandy, S. J. Klaine, D. Schlenk, B. S. Anderson, Bryan W. Brooks, G. Allen Burton, Jr., Peter M. Chapman, Mark T. D. Cronin, N. D. Denslow, C. A. Murphy, J. T. Oris, and **G. I. Scott**. 2012. A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding: Comparative Effects Methodology Developed by the Office of Pesticide Programs and the Office of Water; FIFRA Scientific Advisory Panel Meeting, One Potomac Yard; Arlington, Virginia; SAP Report # 2012-02A: 85pp.

**Scott, G.I.**, M. H. Fulton, S. B. Weisberg, K.A Muraya and G. Lauenstein. 2012. Contaminants of emerging Concern in the Marine Environment: The need for new monitoring and assessment strategies. *Journal of Marine Biology and Oceanography* 1:1. doi:10.4172/2324-8661.1000e102: Invited Editorial.

Alava, J.J., Keller, J.M., Kucklick, J.R., Wyneken, J., Crowder, L., **Scott, G.I.** 2011. Geographical variation of persistent organic pollutants in eggs of threatened loggerhead sea turtles (*Caretta caretta*) from southeastern USA. *Environmental Toxicology and Chemistry* 30(7): 1677-1688.

EPA Science Advisory Board (20 Members including **G. I. Scott** of NOAA). 2011 Integrated Approaches to Testing and Assessment Strategies: Use of New Computational and Molecular Tools. *US EPA Science Advisory Board Report*, Panel on Adverse Outcome Pathways Approaches Report No. 2011-04: 97pp.

EPA Science Advisory Board (19 authors including **G. I. Scott** and T. C. Peterson of NOAA). 2011. FIFRA Panel on Climate Change Effects on Pesticide Registration Criteria . EPA FIFRA Panel on Climate Change Effects on Pesticide Registration Criteria. *US EPA Science Advisory Board Report* No. 2010-06: 35pp.

Uyaguari, M., S. Norman, J. Gooch, K. Jackson and **G. I. Scott**. 2011. The Discovery of Novel Bacterial Antibiotic Resistance Genes in Activated Sludge Using a Metagenomic Approach. *Journal of Applied Env. Microbiology* 77: 8226–8233.

CDC (> 25 authors from different federal agencies including P.S. Sandifer and **G. I. Scott** for NOAA). 2010. When Every Drop Counts: Protecting Public Health During Drought. CDC Interagency Workshop on Drought, Atlanta, GA: 51pp + Appendices.

Johnston, M. A., D. E. Porter, **G. I. Scott**, W. E. Rhodes, and L. F. Webster. 2010. The American Alligator (*Alligator Mississippiensis*) Contribution of Fecal Coliform Bacteria to South Carolina Surface Waters. *Journal of Applied Env. Micro*108 (3): 965-973.

Kelsey, R. H., **G. I. Scott**, D. E. Porter, C. Newell, T. Siewicki, and D. Edwards. 2010. Improvements to shellfish harvest area closure decision-making using GIS, remote sensing, and predictive models. *Estuaries and Coasts* 33 (3): 712-722.

Ferry, John L. Preston Craig, Cole Hexel, Patrick Sisco, Rebecca Frey, Paul Pennington, Michael Fulton, **Geoff Scott**, Alan Decho, Shosaku Kashiwada, Catherine J. Murphy, and Timothy J. Shaw. 2009. Transfer of gold nanoparticles from the water column to the estuarine food web. *Nature Nanotechnology* DOI: 10.1038/NNANO.2009.157.

Uyaguari, M. , P. B. Key, J. Gooch, K. Jackson and **G. I. Scott**. 2009. Acute effects of the antibiotic oxytetracycline on the bacterial community of the grass shrimp, *Palaemonetes pugio*.. Special Issue on Pharmaceuticals in the Environment (Selected by Editor to be in this Special Edition) *Env. Toxicology and Chemistry* Vol. 28 (12): 2715-2724.

Kelsey ,R. H, L. F. Webster, D. J. Kenny, J. R. Stewart, and **G. I. Scott**. 2008. Spatial and temporal variability of ribotyping results at a small watershed in South Carolina. *Water Research* 42 (2008): 2220-2228. doi:10.1016/j.waters.2007.11.038

**Scott, G. I.**, S. Cross, W. McFee, S. Morton, J. Miglarese, K. Kirkwood, J. Burdine, J. Richter, L. Brock, A. Caver, M. Martin, E. Covington, S. Finklea, P. Lee, J. Rice, J. Davis, T. Murphy, J. Shelton, E. Strom. 2008. Development of an Environmental Surveillance Network for South Carolina, USA. RISK WISE, pp. 146-150.

Donald J. Baird, Steven S. Brown, Laurent Lagadic, Matthias Liess, Lorraine Maltby, Matilde Moreira-Santos, Ralf Schulz, and **Geoffrey I. Scott**. 2007. *In situ*-based effects measures: Determining the ecological relevance of measured responses. *Integrated Environmental Assessment and Management* Volume 3 (2): 259–267.

Chung, K.W., M.H. Fulton and **G.I. Scott**. 2007. Use of the juvenile clam, *Mercenaria mercenaria*, as a sensitive indicator of aqueous and sediment toxicity. *Ecotoxicology and Environmental Safety* 67:333-340.

Daugomah, J.W., D.E. Porter, T.C. Siewicki, **G.I. Scott**. 2007. The Effects of Urbanization on populations of Grass Shrimp *Palaemonetes spp* in Small, High Salinity Estuaries. *NOAA Technical Memorandum NOS NCCOS 54*, 28 pp.

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## **PRESENTATIONS**

Over the course of my career I have presented over 416 platform and poster presentations at a variety of scientific and research venues. For the past 10 years, I have present 20-30 invited presentations at a variety of professional scientific meeting venues (SETAC, National Shellfish Association, Interstate Shellfish Sanitation Conference, ERF, APHA, SC APHA, American Society for Microbiology, AAAS, National Academy of Science, Oxford University Roundtable on Climate Change and Environmental Sustainability). For the past 5 years (2009-2013) I have made a total of 85 presentations of which >75% were invited presentations. A list of these presentations for the past 5 years follows:

### **FY 2013**

A total of 16 presentations were made in FY2013 including:

**Scott, G.I.**, M.H. Fulton, J. Moore, S. Norman, M. Uyaguari, D. Schlenck, N. D. Denslow. P. Anderson, J. Drewes, A. Oliviera, S. Snyder, K. Maruya, S. Weisberg. 2012. Development of Standardized Methods for Assessing Antibiotic Resistance Risks. Soc. Of Env. Toxicology and Chemistry Annual Meeting, Long Beach CA, Special Session on Contaminants of Emerging Concern: : Invited Platform Talk. **Nov., 2012.**

**Scott, G. I.** and **J. King.** 2012. Overview of CCEHBR and HML. Presented to a Visiting Delegation of Scientist from Russia touring Charleston, SC as part of the Charleston International Visitor's Bureau. **Dec., 2013.**

**Scott, G.I.**, M. H. Fulton, M. De Lorenzo, J. King, A. F. Holland, A. Blair, P. S. Sandifer, G. T. Chandler, D. Alan, J. Ferry, T. Shaw, D. Porter, T. F. Biddleman, and T. C. Peterson. 2013. Coastal Development and Climate Change: A Recipe for Disaster for Coastal Ecosystem and Human Health. Seminar Presented at Clemson University, Strom Thurmond Institute. **Feb., 2013.**

**Scott, G.I.** 2013. Overview of Research Activities of the Oceans and Clean Coastal Water Team of the Governor's South Atlantic Alliance. Presented to the NOAA SECART Team at CSC. **Feb., 2013.**

**Scott, G.I.,** M. H. Fulton, M. De Lorenzo, A. F. Holland, P. S. Sandifer, G. T. Chandler, D. Alan, J. Ferry, D. Porter, T. F. Biddleman, and T. C. Peterson. 2013. Coastal Development and Climate Change: A Recipe for Disaster for Coastal Ecosystem and Human Health – Implications for Future Coastal Development. Seminar Presented at Coastal Carolina, Marine Science Program. **March, 2013.**

**Scott, G.I.** Climate change and effects on microbes and HABs. Oral Presentation. Southeastern Estuarine Research Society (SEERS), Charleston, SC. Invited Plenary Session Talk. **April, 2013.**

**Scott, G.I.,** M. H. Fulton, M. De Lorenzo, A. F. Holland, P. S. Sandifer, G. T. Chandler, D. Alan, J. Ferry, D. Porter, T. F. Biddleman, and T. C. Peterson. 2013. Coastal Development and Climate Change: A Recipe for Disaster for Coastal Ecosystem Health, Trident Technical College, Charleston, SC Invited Platform Talk, **April, 2013.**

**Scott, G.I.,** J. Moore, M. DeLorenzo, M. Fulton, L. Webster, S. Norman, M. Uyaguari. An Overview of Antibiotic Resistance in Coastal Ecosystems of the Southeastern US. Oral Presentation. South Carolina American Society Microbiology, MUSC, Charleston, SC. **April, 2013.**

**Scott, G.I.,** M. H. Fulton, M. De Lorenzo, A. F. Holland, P. S. Sandifer, G. T. Chandler, D. Alan, J. Ferry, D. Porter, T. F. Biddleman, and T. C. Peterson. 2013. Coastal Development and Climate Change: A Recipe for Disaster for Coastal Ecosystem Health, SC DNR and SC Sea Grant Consortium Workshop on HABs: Invited Platform Talk, **April, 2013.**

**Scott, G. I,** J. Moore, M. H. Fulton, M. De Lorenzo, and P. Sandifer, G. T. Chandler, D. Alan, S. Norman, D. Porter, T. F. Biddleman, and T. C. Peterson. 2013. Vibrio Monitoring and Modeling Assessments in South Carolina. Gulf and South Atlantic States Shellfish Meeting, Charleston, SC: Invited Plenary Session Talk. **May 2013.**

**Scott, G. I.,** M. H. Fulton, E. F. Wirth, J. King, P. Sandifer, K. Muraya, S. Weisberg, G. T. Chandler and D. Porter. Contaminants of Emerging Concern: Addressing Ecotoxicological Risks. Gulf and South Atlantic States Shellfish Meeting, Charleston, SC: Invited Plenary Session Talk. **May 2013.**

**Scott, G.I.,** L. C Wickcliffe and D. Porter. 2013. Overview of South Atlantic Alliance, Clean Coastal Waters Team Activities: Pesticide Decision Making Tool. Governor's South Atlantic Alliance, Charleston, SC: Invited Platform Talk via webex. **June, 2013**

**Scott, G. I.** 2013. An Overview of NCCOS Research in Charleston, SC at Ft Johnson. Overview talk to NOAA COOPS Staff, Silver Spring MD. **June, 2013**

**Scott, G.I., D. Tufford** and J. Moore. Long term forecasting of Vibrios using Sea Level Rise models and Salinity. Oral Presentation. George Washington University, Washington, DC. July, 2013. Invited Platform Talk.

**Scott, G.I.,** L. C Wickcliffe and D. Porter. 2013. Overview of South Atlantic Alliance, Clean Coastal Waters Team Activities: Pesticide Decision Making Tool. Governor's South Atlantic Alliance, Raleigh, NC: Invited Platform Talk. **Sept., 2013:** To Be Delivered.

**Scott, G.I.,** M. H. Fulton, M. De Lorenzo, Jeff King, P. S. Sandifer, G. T. Chandler, D. Alan, J. Ferry, D. Porter, T. F. Biddleman, and T. C. Peterson. 2013. Coastal Development and Climate Change: A Recipe for Disaster for Coastal Ecosystem Health, Florida A &M, Invited Platform Talk, **Sept.,2013:** To Be Delivered.

## **FY 2012**

A total of 12 presentations were made in FY 2012 including:

**Scott, G. I.** Overview of NCCOS and CCEHBR Research on Climate. CCEHBR Regional Climate Workshop. CCEHBR, Charleston, SC. **October, 2011**

**Scott, G.I., M.H. Fulton, P.L. Pennington,** D. Porter, G.T. Chandler, C.H. Scott. The Environmental Sensitivity Index and Oil and Hazardous Materials Impact Assessments: Linking Pre-spill Contingency Planning and Ecological Risk Assessment. Oral Presentation. Miles o. Hayes Symposium on Applied Geomorphology, University of South Carolina, Columbia, SC. **October, 2011.**

**Scott, G. I.** Overview of CCEHBR Research on Vibrios and Climate Change. RISA Climate Workshop. University of South Carolina, Columbia, SC. **October, 2011.**

**Scott, G.I.,** D. Porter, C.H. Scott, L. Wickcliffe, A.F. Holland, **A. Blair,** M.A. Reiter. Integrating Risk Assessment of Environmental Stressors with Impacts on Ecosystem Services and Human Health. Oral Presentation. CERF 2011: Societies, Estuaries & Coasts: Adapting to Change, Daytona Beach, FL. **November, 2011.**

**Scott, G. I.,** M .H. Fulton, M. De Lorenzo, F. Holland, P. A. Sandifer, G. T Chandler, D. Porter and T. F. Biddleman. Additive Effects of Coastal Development and Global Climate Change: A Recipe for Disaster for Coastal Ecosystem Health. Mote Marine Laboratory: Invited Seminar. **January, 2012**

**Scott, G. I.,** M .H. Fulton, M. De Lorenzo, F. Holland, P. A. Sandifer, G. T Chandler, D. Porter and T. F. Biddleman. Additive Effects of Coastal Development and Global Climate C Change: A Recipe for Disaster for Coastal Ecosystem Health. American Fisheries Society Meeting, Seabrook Island, SC: Invited Keynote. **February, 2012**

**Scott, G. I.,** M .H. Fulton, M. De Lorenzo, S. White, F. Holland, A. Blair, P. A. Sandifer, G. T Chandler, D. Porter, D. Alan, T. C. Peterson and T. F. Biddleman. Coastal Development and Global Climate Change: A Recipe for Disaster for Coastal Ecosystem Health. NOAA in the Carolina's Annual Meeting, Charleston, SC: Invited Platform . **March, 2012.**

**Scott, G. I.** M. H. Fulton, M. De Lorenzo, F. Holland, A.Blair, P. Sandifer, G. T. Chandler, D. Alan and D. Porter, T. F. Biddleman , T. C Peterson. Ecological and Human Health Threats Related to Drought in Coastal Ecosystems. National Integrated Drought Information System Carolinas Pilot Workshop, Wilmington, NC: Invited Key Note Address. **July, 2012.**

**Scott, G.I.,** A.D. Shirey, M. H. Fulton, E.F. Wirth, P. Sandifer, G. T. Chandler, and D. Porter, Contaminants of Emerging Concern: Addressing Ecotoxicological Risks. Southeastern Coastal Ocean Disposal Program Annual Meeting. US EPA and US ACE, Atlanta, GA: Invited Presentation. **August, 2012.**

**Scott, G.I.,** M.H. Fulton, J. Moore, S. Norman, M. Uyaguari, D. Schlenck, N. D. Denslow. P. Anderson, J. Drewes, A. Oliviera, S. Snyder, K. Maruya, S. Weisberg. 2012. Development of Standardized Methods for Assessing Antibiotic Resistance Risks. Soc. Of Env. Toxicology and Chemistry Annual Meeting, Long Beach CA, Special Session on Contaminants of Emerging Concern: Invited Platform Talk. **Nov., 2012.**

### **FY 2011**

A total of 13 presentations were made in FY 2011 including:

**Scott, G.I.** Overview of CCEHBR and HML. 2010. Salley Yozell, NOAA Policy Director, Visit to CHHR and CCEHBR. **Oct., 2010.**

**Scott, G.I.** An overview of the Ixtoc Oil Spill and Environmental readiness for Oil Spills in South Carolina. Invited Plenary Presentation, SC Water Resources Conference, **Oct., 2010.**

**Scott, G.I.** Remarks on Behalf of the NOAA Administrator on Groundbreaking of UNC Wilmington New Molecular Biology NIST Research Center, **Oct., 2010.**

**Scott, G.I.** NOAA Research in the South Atlantic Bight. Southeastern Environmental Natural Resource Leadership Group Meeting (Federal Interagency Working Group), Charleston, SC. Invited presentation on behalf of NOAA, **Dec., 2010.**

**Scott, G.I.** Global Climate Change and Urbanization: A Recipe for Disaster. Invited Seminar, Arnold School of Public Health, **Feb., 2011**

**Scott, G.I.** Global Climate Change and Urbanization: A Recipe for Disaster. Invited Seminar, NOAA, National Climate Data Centers throughout the US, **March, 2011**

**Scott, G.I.** Global Climate Change and Urbanization: A Recipe for Disaster. Invited Seminar, Integrated Ecosystem Assessment Program, Bethune Cookman University, Daytona Beach, FL, **April, 2011.**

**Scott, G.I.** An overview of CCEHBR Water Quality and Watershed Research. US ACE Symposium on Water Issues in SC, **May 2011.**

**Scott, G. I.** An overview of research at CCEHBR and HML. 2011. Holly Bamford, DAA NOS Visit to CCEHBR ad HML, **June, 2011.**

**Scott, G. I.** An overview of research at CCEHBR. 2011. Dr. Michael Reiter and graduate Students from Bethune Cookman University as part EPP Visit to CCEHBR ad HML, **July, 2011.**

**Scott, G.I.** An overview of research at CCEHBR and HML that supports NCCOS, NOS and NOAA. 2011. Randy Lyon, OFFICE OF MANAGEMENT AND BUDGET. Visit to CCEHBR ad HML, **Sept., 2011.**



**Scott, G. I.** An overview of research at CCEHBR and HML. 2011. US ACE Commander Michael Chamberlayne and Staff Visit to CCEHBR ad HML, **Sept., 2011.**

### **FY2010**

A total of 22 presentations were made in FY 2010 including:

**Scott, GI.** 2009. Urbanization and Climate Change: A Recipe for Disaster. College of Charleston Research Colloquium, Key Note Address. **Oct., 2009.**

**Scott, G.I.,** Paul Sandifer, Fred Holland, Michael Fulton, Jill Stewart, Jan Gooch. 2009. Coastal Land Use, Estuarine Impacts and Potential Effects on Human Well-Being. CERF Meeting, Portland , OR: Platform Presentation. **Nov., 2009.**

**Scott, G.I.** Paul A. Sandifer, Scott Cross, John Miglarese, A. Fred Holland, Michael H. Fulton<sup>1</sup>, Jill Stewart, Tom Chandler , Jane Richter, and Jan Gooch. 2009. Urbanization Impacts on Coastal Ecosystems and Potential Impacts on Human Health and Well-Being. APHA National Meeting, Philadelphia, PA: Invited Plenary Session with the American Environmental Nurses Association. **Nov., 2009.**

**Scott, G. I.** 2010. HML Science Board Update. Presented to HML Executive Board, Hollings Marine Laboratory, Charleston, SC. **January, 2010.**

**Scott, G.I.** Overview of CCEHBR and HML. 2010. Jane Lubchenco, Administrator of NOAA Visit to CHHR and CCEHBR. **January, 2010.**

**Scott, GI.** Overview of the ESN: Applications to Public Health Issues during environmental emergencies. USC Center for Public Health Preparedness: Invited presentation to CDC Technical Oversight Committee site visit. Columbia, SC. **February, 2010.**

**Scott, GI** and Scott Cross. 2010. An Overview of SC Environmental Surveillance Network: Applications to Beach Monitoring Programs. US EPA Region IV and GOM Beach Monitoring Program Workshop, Jekyll Island, GA: Invited Platform Talk. **February, 2010.**

**Scott, G.I.** Overview of CCEHBR and HML. 2010. Mary Glackin, Chief Financial Officer of NOAA, Visit to CHHR and CCEHBR for NOAA FY10 Budget Rollout. **February, 2010.**

**Scott, GI** and Scott Cross. 2010. An Overview of SC Environmental Surveillance Network: Applications to Beach Monitoring and Shellfish Harvest Area Closure Programs. SC DHEC Meeting, Columbia, SC: Invited Platform Talk. **March, 2010.**

**Scott, G.I.** An overview of Coastal Ecosystem Health Issues in SC. Trident Technical College: Invited Presentation. **April, 2009.**

**Scott, G.I.** Overview of Environmental Microbiology and Source Tracking Research at CCEHBR and HML. 2010. American Society of Microbiology, S E Regional Meeting. **April, 2010.**

**Scott, G.I.** Overview of CCEHBR and HML. 2010. Maureen Wiley, NOS Chief Financial Officer, Visit to CHHR and CCEHBR. **April, 2010.**

**Scott, G.I.,** Paul A. Sandifer, Scott Cross, John Miglarese, A. Fred Holland, Michael H. Fulton, Jill Stewart, Tom Chandler, Jane Richter, and Jan Gooch. 2010. Urbanization and Global Climate Change Effects on Coastal Ecosystems and Potential Impacts on Human Health and Well-Being. SC APHA Annual Meeting, Myrtle Beach, SC: Invited Platform Talk. **May, 2010.**

**Scott, G.I.,** Paul A. Sandifer, Tom Chandler, Jane Richter, and Jan Gooch. 2010. The Importance of Environmental Health in Better Informed and Trained Nurses in the 21st Century. SC APHA Annual Meeting, Myrtle Beach, SC: Invited Platform Talk. **May, 2010.**

**Scott, G.I.,** Jeff Hyland, Bob Wood, Mike Fulton, Susan White, John Ramsdell, Steve Morton, John Christiansen and Russell Calendar, David Evans, David Johnson, Alan Lewitus, Rob Magnien, Scott Cross. 2010. An Overview of NCCOS Research in the Gulf of Mexico Applicable to Integrated Ecosystem Assessments. Northern Gulf of Mexico Research Institute Annual Meeting, Mobile, AL: Invited platform presentation. **May, 2010.**

**Scott, G.I.** Overview of the of the Ixtoc Oil Spill: Applications to Readiness Planning by Southeastern Coastal States for the DWH Oil Spill in the southeastern US. Regional Sea Grant Workshop, Jacksonville, FL. **June 2010.**

**Scott, G.I.** Overview of the of the Ixtoc/DWH Oil Spills and ESN: Applications to Public Health Issues during environmental emergencies. USC Center for Public Health Preparedness: Invited presentation to CDC CPHP site visit team. Columbia, SC. **July, 2010.**

**Scott, G.I.** Ecotoxicology of Pesticides and PAHs. MUSC OHHI Invited Lecture. Medical University of South Carolina, Oceans and Human Health Program, Charleston, SC. **July, 2010.**

**Scott, G.I.,** Paul A. Sandifer, Scott Cross, John Miglarese, A. Fred Holland, Michael H. Fulton, Steve Morton, Jill Stewart, Tom Chandler, Jane Richter, and Jan Gooch. 2010. Urbanization Impacts on Coastal Ecosystems and Potential Impacts on Human Health and Well-Being: Development of an Environmental Surveillance Network to Track Major Ecosystem Impacts. Georgia Harmful Algal Bloom Workshop, Brunswick, GA: Invited Platform Talk. **Sept., 2010.**

**Scott, G.I.** Overview of CCEHBR and HML. 2010. Salley Yozell, NOAA Policy Director, Visit to CHHR and CCEHBR. **Oct., 2010.**

**Scott, G.I.** An overview of the Ixtoc Oil Spill and Environmental readiness for Oil Spills in South Carolina. Invited Plenary Presentation, SC Water Resources Conference, **Oct., 2010.**

**Scott, G.I.** Remarks on Behalf of the NOAA Administrator on Groundbreaking of UNC Wilmington New Molecular Biology NIST Research Center, **Oct., 2010.**

**Scott, G.I.** NOAA Research in the South Atlantic Bight. Southeastern Environmental Natural Resource Leadership Group Meeting (Federal Interagency Working Group), Charleston, SC. Invited presentation on behalf of NOAA, **Dec., 2010.**

#### **FY2009**

A total of 22 presentations in FY2009, including:

**Scott, G. I.,** B.C. Thompson, L. F. Webster, J. A. Gooch, J.R. Stewart, A. K. Leight, P. Fair, J Bemiss, M. H. Fulton, P. B. Key, F. Holland, P. Sandifer, D. E. Chestnut, D. Graves, D. Payne, D. Baize, R. F. Van Dolah, H. Kelsey, D. Porter, G. T. Chandler, J.L. Ferry. 2008. Endocrine Disrupting Chemicals and Pharmaceutical Hazards in Aquatic Ecosystems. Invited Presentation. SC Wastewater Operators Association Annual Meeting, Lexington, SC. **Oct. 2008.**

**Scott, G. I.** 2008. HML Futures Workshop Update. Presented to HML Staff at SC DNR Auditorium, Charleston, SC. **Oct. 2008.**

**Scott, G. I.** 2008. HML Science Board Update. Presented to HML Executive Board, Hollings Marine Laboratory, Charleston, SC. **Nov. 2008.**

**Scott, G. I.,** G. Matlock, M. H. Fulton, M. DeLorenzo, A.F. Holland, P. Sandifer, G.T. Chandler and D. Porter. 2008. Ecosystem and Human Health Effects Associated with Eutropication. Invited Presentation U.S. Conference of Mayors, Ft. Lauderdale, FL. **Nov. 2009.**

**Scott, G. I.** 2008. An Overview of the Hollings Marine Laboratory. MUSC Board of Visitors. Hollings Marine Laboratory, Charleston, SC. **Nov. 2009.**

**Scott, G. I.** 2008. HML Science Board Update. Presented to HML Executive Board, Hollings Marine Laboratory, Charleston, SC. **February 2009.**

**Scott, G. I.,** M. H. Fulton, J. Ramsdell, J. Hyland, B. Wood, S. Morton, S. White, J. Christiansen, R. Calendar, D. Evans, D. Johnson, A. Lewitus, R. Magnien, and S. Cross. 2009. An Overview of NCCOS Research in the Gulf of Mexico Applicable to Integrated Ecosystem Assessments. Invited Presentation NOAA GOM IEA Workshop, Waveland, MS. **February 2009.**

**Scott, G. I.,** M. H. Fulton, A. K. Leight, P. L. Pennington, E. F. Wirth and G. T. Chandler. 2009. Endocrine Disruption In Marine Invertebrates: Effects on Agricultural Pesticides and Emerging Contaminants of Concern on Mollusk and Crustaceans. Invited seminar Chesapeake Bay Consortium on Ecosystem Based Management of the Chesapeake Bay, Batimore, MD. **March, 2009.**

**Scott, G.I,** H. Kelsey, J. Gooch, J. Stewart and D. Porter. 2009. Development of Microbial Source Tracking Tools To Better Manage Pollution Sources Impairing Coastal Ecosystems. Invited seminar Chesapeake Bay Consortium on Ecosystem Based Management of the Chesapeake Bay, Batimore, MD. **March, 2009.**

**Scott, G. I.** L. Schwacke, F. Holland, R. Chapman, M. H. Fulton, S. White, J. Ramsdell, S. Morton, P. Moeller, J. Christiansen, R. Calendar, D. Evans, D. Johnson, A. Lewitus, R. Magnien and S. Cross. 2009. An

Overview of OHHI Related Research at NCCOS. Invited Presentation to NOAA SAB Subcommittee on Oceans and Health, Silver Spring, MD. **March 2009.**

**Scott, G.I.** , P. Sandifer, M. H. Fulton, J. Gooch, A. F. Holland, R. Devoe, J. Stewart, T. Chandler and D. Porter. 2009. "Managing Coastal Urbanization and Development in the 21st Century: Balancing Human Dimensions and Environmental Quality Issues". Invited seminar U.S. EPA Research Triangle Park, Raleigh, NC and Broadcast to all ORD laboratories within EPA. **April, 2009.**

**Scott, G.I.** Overview of CCEHBR and HML. 2009. U.S. Senate Commerce Committee Staff Visit to CHHR and CCEHBR. **April, 09.**

**Scott, G.I.** An overview of Coastal Ecosystem Health Issues in SC. Trident Technical College: Invited Presentation. **April, 2009.**

**Scott, G.I.** Overview of CCEHBR and CHHR. Office of Budget and Management Site Visit to CCEHBR and CHHR. **May, 2009.**

**Scott, G. I.** Overview of the ESN: Applications to Public Health Issues during environmental emergencies. USC Center for Public Health Preparedness: Invited presentation to CDC site visit team. Columbia, SC. **May, 2009.**

**Scott, G. I.** Overview of coastal urbanization and environmental health issues in coastal SC. Spring Island Foundation: Invited presentation. Spring Island, SC. **June, 2009.**

**Scott, G.I.** Microbial Source Tracking Methods Relevant to Identification of Bacterial Pollution Sources in the May River Estuary. Bluffton Technical Advisory Committee Meeting. **June, 2009.**

**Scott, G.I.** Overview of COL and CCEHBR. Office of Budget and Management Site Visit to COL. **June, 2009.**

**Scott, G.I.** Community Approaches to Cumulative Risk Assessment in Coastal Ecosystems. EPA Workshop on Cumulative Risk Assessment: Invited Keynote Address-Plenary Session. Chicago, ILL. **July, 2009..**

**Scott, G.I.** Hollings Marine Laboratory: Think "Green" with Marine. Green Renewable Oceanographic Technology Transfer Opportunities (GROTTO) Meeting: Invited presentation SC Research Authority and GROTTO. Charleston, SC. **July, 2009..**

**Scott, G.I.** Ecotoxicology of Pesticides and PAHs. MUSC OHHI Invited Lecture. Medical University of South Carolina, Oceans and Human Health Program, Charleston, SC. **July, 2009.**

#### **FILMS, TV, RADIO AND VIDEOS**

**2013 - Video - "Dolphins as Sentinels of the Marine Environment"**. Produced by Pat Fair and Larry Lawskowski and script written by Chris Marsh, Tony Mills, Pat Fair and Geoff Scott. Photos by Geoff Scott, Pat Fair, Tony Mills and Chris Marsh. Voice over – Tony Mills. NOAA/NCCOS CCEHBR, the Low

Country Institute and Port Royal Sound Foundation. Length: 3 minutes (short version) and 8 minutes (long version).

**2013, National Public Radio – “Your Day”.** Feb, 2013 - *Impacts of Urbanization on Coastal Ecosystems in South Carolina*. Length: 20 minute interview with Dr. Bob Becker, Professor Emeritus at Clemson University and Host of Your Day followed by invited seminar at the Strom Thurmond Institute at Clemson University.

**2008. National Public Radio – “All Things Considered “ – “The Poop Detectives”-** National story detailing progress made using microbial source tracking in determining different sources of bacterial pollution causing impairments to water quality. Length: 5 minutes.

**1980. Oil and the Wilderness.** Film detailed potential impacts of oil and gas lease development in Alaska, America’s final frontier. Produced by L. Cameron, University of South Carolina (Columbia) and NOAA. Technical assistant and scientific participant in film. Film won several environmental awards. Length: 25 minutes.

**1979. Ixtoc Oil Spill.** CBS Nightly News with Walter Cronkite. Interview by David Dick (3 minutes).

#### **MEDIA/PRES S PRODUCTS: PRESS RELEASES: PRINT AND BROADCAST MEDIA**

Our NOAA Center prepares selected scientific findings for public press releases on topics of major interest (e.g . Chemical Structure of the Pfiesteria Toxin, Marine Mammal Research, Deepwater Horizon Oil Spill). All Center Press releases are drafted, reviewed and executed through the Center Director’s Office before release through NOAA Public Affairs. Over the past 4 years we have produced 47 press releases or participated in significant media interviews(CNN News, NBC Today Show, NPR, NY Times, LA Times, Chesapeake Bay Journal, Your Day). I was directly involved in 8 of these 47 interviews over the past 4 years. A list of recent Media/Press Releases is provided as a separate attachment.

#### **GRANTSMANSHIP**

Over my career, I have been involved in competitive research grants that totaled more than **\$34.659 million dollars**. More details are provided below:

#### **USC, Professor and Chair ENHS, 2014-Present - \$459,000 Total**

**2015 - Water Tech - \$250,000** -- Clinical Trials for EPA FIFRA Registration; **National Academy of Science - \$125,000** -Development of a Conceptual model of stress-associated health effects of multiple impacted ecosystem services in the Gulf of Mexico; **Environ Foundation- \$50,000** - Measuring and modeling aerosolized antibiotic resistant bacteria concentrations from metropolitan wastewater treatment plants to address public health concerns; **USC Research Engagement Collaborative- \$25,000** as co PI (PI Dow-USC) Coastal Health, Sustainability and Adaptation.

**2014 – National Park Service, \$9,500** - Ecoforecast of Vibrio bacterial hazards in estuarine surface waters.

#### **NOAA Center Director CCEHBR - 2001-Present**

As Center Director at CCEHBR I have worked with our PIs to bring in > **\$21M** in extramural funding from a variety of sources including other federal agencies (NSF, US EPA, other line organizations within NOAA, US Army Corp of Engineers, US DOD, US DOE, US Fish and Wildlife Service, Center for Disease Control and the Office of Naval Research), state agencies (SC Dept. of Natural Resources, MD Dept. of Natural Resources, SC Dept. of Health and Env. Control, FL Dept. of the Env., South Florida Water Management District, Southern California Coastal Water Research Program) and private foundations (Hewlett Packard Foundation, Smyth Foundation, Low Country Institute). A perusal of the budget table (page 3) indicates that from 2007-2013, extramural grant funds of > \$11.86M for CCEHBR (including DHW funding for HML in 2013 that involves CCEHBR). From 2005-2013, extramural grant funds of > \$18.6M in extramural funding was achieved by CCEHBR which supports the sustainability of funding effectiveness as Center Director. My specific role in grantsmanship is to identify funding sources and put together collaborative and competitive research teams to address the research issue. Our research partners for these collaborations have included other federal and state agencies as well as Academia (USC School of Public Health/Marine Science Program, Medical University of South Carolina, University of Charleston, Clemson University, Texas Tech University, Univ. of Florida, Virginia Tech University, The Citadel). Our major funding historically has come from EPA's Office of Pesticide, ORD, and Endocrine Disrupting Chemicals Program, DOD, NOAA Coral Research Program as well as from NIST and Deepwater Horizon Funding.

#### **Branch Chief and Program Lead at CCEHBR – 1990-2001**

As a Branch Chief and Program Lead at CCEHBR, I collaborated on grants and directed the resulting research as PI or CO-PI for extramural grants totaling > **\$12 million dollars** including collaborations with other federal agencies (US EPA, other line organizations within NOAA, US Army Corp of Engineers, US Fish and Wildlife Service) Academia (USC School of Public Health/Marine Science Program, Medical University of South Carolina, University of Charleston, Clemson University, Texas Tech University, Univ. of Florida, Virginia Tech University, The Citadel) and state agencies (SC Dept. of Natural Resources, SC Dept. of Health and Env. Control, FL Dept. of the Env., South Florida Water Management District). Annually developed spending/research/staffing plans for each project in four different research programs including: Contaminant Chemistry, Toxicology, Env. Microbiology & Env. Modeling and Assessment within the Marine Ecotoxicology Branch.

**Assistant and Associate Professor, USC 1982-1990** - I supervised grants and directed research as PI or CO-PI for extramural grants totaling > **\$1.2 million dollars** including collaborations with federal agencies (US EPA), state agencies (SC Dept. of Health and Env. Control) and Private industry (Abbott Labs; American Cyanamide). Annually developed spending/research/staffing plans for each project for

each different research project. This included familiarity with both academic and fiscal policies and procedures at the university and the SC Research Foundation. Had to work with the offices of Procurement ,Sponsored Programs and Research and Contract and Grant accounting on a regular basis. Responsible for all health and safety issues in more than 8 different university laboratories. Supervised ecotoxicology research on urbanization, pesticide toxicology, contaminant chemistry and water quality and environmental microbiology. Directly supervised 5 Post Doctoral Research Assistant Professors and 4 BS level technicians who conducted research throughout SC, MS and NC. Also, directed/co-directed research of more than 23 graduate students ( 5 PhDs;18 MS). Also was a Committee member for the research of 7 additional graduate students (1 PhDs; 6 MS) and a 5<sup>th</sup> grade summer student (won 1<sup>st</sup> Place District Science Fair, Lexington County School District), who conducted research at our laboratory.

#### **Director of the Toxicology Program and Wide Awake Landing Marine Laboratory,**

**Research Planning Institute 1980-1982** - I supervised grants and directed research as PI or CO-PI for extramural grants totaling > **\$200,000 dollars** including collaborations with federal agencies (US FDA; NOAA),the National Science Foundation and Private Industry. Annually developed spending/research/staffing plans for each project for each different research project. This included familiarity with both fiscal policies and procedures at Research Planning Institute, a small private consulting laboratory. Had to work remotely from our field station in Hollywood , SC with our corporate office in Columbia, SC to address procurements, contract and grant accounting, and to direct daily operations of the small field station on a daily basis. Responsible for all health and safety issues in 2 laboratories (wet lab and microbiology lab) . I was also responsible for construction/upkeep of the physical plant and had to supervise building and grounds maintenance. Supervised toxicology research on oil/hazardous material spills, water chlorination issues and environmental microbiology issues associated with cholera outbreaks in the Gulf of Mexico. Directly supervised 4 BS level technicians and 1 high school student, who conducted research in throughout SC and FL. Also, directed the research of 2 graduate students at USC (2 MS), who conducted research at our laboratory.

#### **MASTERS, DOCTORAL AND POST-DOCTORAL RESEARCH SUPPORT (1995-Present)**

***Over the past 31 years (1982-2013) I have participated on a total of 113 Graduate Research Committees (Masters Thesis = 52, Masters Practicum =8 and PhD Dissertation = 53) at the University of South Carolina, Medical University of South Carolina, College of Charleston, Clemson University, FL A&M, Duke University, Texas Tech University and the University of North Carolina, School of Public Health.*** I have participated on 52 Masters Thesis Research Committees, have personally been Major or Co-Major Professor on 31 Masters Thesis and currently serve on 4 Thesis Committees and Co-Direct 1

current Masters Student. I have had participated on 8 Masters Practicum Research Committees, have personally been Major Professor on 5 Masters Practicum and currently Direct 2 Masters Practicum Students. I have had participated on 53 Doctoral PhD Research Committees, have personally been Major or Co-Major Professor on 15 Doctoral PhD Dissertations and currently serve on 5 PhD Research Committees. Since 1995, I have had 6 Post Docs conducting research under my supervision. ***I currently serve on 5 PhD Committees, 4 Master Thesis Committees and 2 Masters Practicum.*** A detailed list of Post Docs, PhD and Masters students is provided as a separate attachment.

#### **SCIENTIFIC ACTIVITIES:**

Alliance for Coastal Technology, Ad Hoc Technical Advisor -2002-2007.  
Bluffton Technical Advisory Committee for the Environment – Committee Chairman, 2007 - Present  
Carolina Society of Env. Toxicology and Chemistry - President , 2003.  
Carolina Society of Env. Toxicology and Chemistry, Board Member, 2000-2003.  
CCA Treated Lumber Expert Review Panel, State of New Jersey- 1998-99  
Charleston Chamber of Commerce – Think Tech Committee 2006- Present  
Convener of the Shellfish Restoration Workshop for the Southeastern US -1997.  
Convener of NOAA Climate Workshop -2011  
EPA Science Advisory Board Member - ECSTAC Panel – 1997-99.  
EPA Env. Technology Verification Board Member, 2001- Present  
EPA’s Advisory Board, FIFRA Panel on Climate Change Effects on Pesticide Registration Criteria. 2010.  
EPA’s Advisory Board, FIFRA Panel on Adverse Outcome Pathways Approaches. 2011.  
EPA’s Advisory Board, Panel on Scientific Issues Associated with Common Effects Methodology Developed by the Office of Pesticides and the Office of Water. 2012.  
EPA’s FIFRA Scientific Advisory Panel on A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding: Endocrine Disruptor Screening Program (EDSP) Tier 1 Screening Assays and Battery Performance.2013.  
EPA’s FIFRA Scientific Advisory Panel on A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding: Proposed Endocrine Disruptor Screening Program (EDSP) Tier 2 Ecotoxicity Tests. 2013.  
EPA’s FIFRA Scientific Advisory Panel on A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding: Weight-of-Evidence: Evaluating Results of Endocrine Screening Program Tier 1 Screening. 2013  
Governors Primary Health Care Task Force for SC -1982-84.  
Governor’s South Atlantic Alliance – NOAA Representative  
Gulf of Mexico Alliance – Member of Water Quality Subcommittee  
Instructor SETAC Short Course on International Methodologies for Ecotoxicology on Developing Nations -1999  
Instructor - SEATC Short Course on Sediment Ecotoxicology -2007.  
Interstate Member and Shellfish Sanitation Conferences Task Force 1 Representative for NMFS (2004-2006)  
Interstate Shellfish Sanitation Conferences Member of Biotoxin, Shellfish Restoration, & Harvest Survey Committees and Task Force I representative for NOAA. (2002-present)  
Journal of Marine Biology and Oceanography – Editorial Board 2012 - Present  
Journal of Marine Biology and Oceanography – Editor in Chief 2012 - Present  
NOAA Representative on White House Interagency Task Force on Biosurveillance, 2012- Present  
NOAA Representative on Federal Water Quality Monitoring Council, 2012 – Present



NOAA Representative of the Interagency Working Group on Gulf of Mexico Restoration, 2010-2011.  
NOAA Representative of the Interagency Working Group on the Deepwater Oil Spill, 2010.  
NOAA Representative of the Interagency Working Group on Pharmaceuticals and Personal Care Products 2006-2010  
NOAA Representative on Interagency Task Force on Endocrine Disrupting Chemicals (EDSTAC -appointed by NOAA Administrator Dr. James Baker) - 1997-99.  
NOS Representative on Pathogens Ecoforecasting Working Group (Co-Chair) – 2012 - Present  
Reviewer for the Journal of American Chemical Society  
Reviewer for American Society for Testing Material  
Reviewer for Archives of Env. Contamination and Toxicol.  
Reviewer for Chemosphere  
Reviewer for Env. Health Perspectives  
Reviewer for Env. Science and Technology  
Reviewer for Env. Toxicology and Chemistry  
Reviewer for Estuaries and Journal for Coastal Research  
Reviewer for Journal of Experimental Marine Biology and Ecology  
Reviewer for Marine Pollution Bulletin  
Reviewer for Water Resources Bulletin  
South Atlantic Alliance – NOAA Representative -2011-Present  
SC BIO Advisory Committee – NOAA Representative - 2006-2009  
SETAC – Member since 1985  
Taura Syndrome Expert Review Panel. US EPA and Ecuador -1998  
United Nations Gulf of Guinea Large Marine Ecosystem Study Team Member -1998-99.  
White House, Office of Science & Technology – NOAA Representative on the Interagency Biosurveillance Science and Technology Task Force, Co-Chair Detect the Threat Subgroup

#### **AWARDS :**

##### **Personal Awards:**

- 2012 – NOS Peer Rafting Award for Research on the Deepwater Horizon Oil Spill
- 2008 - NOAA Administrators Award.
- 2004 – USC School of Public Health Outstanding Federal Partner Award
- 1995 - Federal Employee of the Year. Greater Charleston, SC Areas. Scientific Research
- 1989 - Outstanding Young Investigator Award, School of Public Health, University of South Carolina.
- 1980 - NOAA's Unit Citation Award for participation in the IXTOX I oil spill response efforts.

##### **Center Awards:**

- 2013 – U.S. Dept. of Commerce Gold Medal – National Phytoplankton Monitoring Program- Dr. Steve Morton (Pending)
- 2013 – NOS Peer rafting Award – Dr. Scott Cross -National Phytoplankton Monitoring Program
- 2013 – NOS Employee of the Year – Karen Laskowski – Administrative Services

- 2013 – NOA EEO Award – Dr. Paul Pennington, Research Interactions with Minority Serving Research Institutions
- 2013 -NCCOS People Committee/EEO Special Achievement Award - Andrew Shuler (JHT)for engineering and operating a community school phytoplankton outreach program in North and South Carolina.
- 2013 – NCCOS People Committee EEO/Diversity Peer Recognition Award - Karen Hayman, JoAnn McQuay, and Jane Keller for their extraordinarily cheerful and creative administrative work as well as organizing diversity activities that enhance morale.
- 2013 – NOAA Distinguished Scientific Career Achievement – **Dr. Patricia A. Fair** for outstanding research that increased scientific knowledge, understanding and tools to benefit the health of marine mammals and humans.
- 2013 - NOAA Administrator’s Award – Dr. Robert Wood (NOS) for scientific achievement in identifying the role of multi-decadal climate patterns on striped bass harvests and its fishery management implications.
- 2012 – NOAA Peer Rafting Award for Research on the Deepwater Horizon Oil Spill – Drs.Mike Fulton, Janet Moore, Paul Comar and Russell Callender
- 2011 – DOC Gold Medal Award HAB Toxin Health Research – Dr. John Ramsdell
- 2011 – NOAA Administrators Award Outer Continental Shelf National Assessments – Dr. Jeff Hyland
- 2011 – Deep Water Horizon Oil Spill -15 Staff at CCEHBR and HML
- 2011 – NOS Quarterly Safety Pro Award – Jessica Tiedeken, Jeanine Morey, Tina Mikulski, Tod Leighfield
- 2011 – USC Norman J. Arnold School of Public Health Outstanding Alumni Award – Dr. Pete Key
- 2011 – US Dept. of Commerce Environmental Sustainability Award for Green Innovation
- 2011 – CFC Distinguished Coordinator Award – Joe Wade
- 2010 – Administrator’s Award for Emerging Contaminants and HAB Sensors– Drs. Mike Fulton, Greg Doucette
- 2010 – Bronze Medal Award Emerging Contaminants – Drs. Pete Key, Ed Wirth
- 2010 – NOAA’s Green Grant Award – Oxford Cooperative Laboratory
- 2009 – National Safety Council, Industry Leader Award for Government in the US
- 2009 – National Safety Council, National Safety Achievement Award
- 2009 – NOS Employee of the Year – Dr. Peter Moeller
- 2009 – NOS Employee of the Year – Rick Meitzler
- 2008 – NOAA EEO Award – James Daugomah
- 2008 – Gold Medal Toxins/MNP for Identification of the Pfeisteria Toxin– Dr. Peter Moeller
- 2008 – NOS Team Member Award – Raluca Semenuic
- 2008 – Administrator’s Award – Drs. Geoff Scott, Fred Holland
- 2007 – NOS Distinguished Career Award for Seafood Safety – Dr. Malcolm Meaburn
- 2007 – Bronze Medal SPMN – Dr. Steve Morton
- 2007 – CFC Ironman Award – Joe Wade
- 2006 – Bronze Medal EMS – Rick Meitzler & Jay Lewis
- 2006 – Bronze Medal Hurricane Katrina Response – Dr. Mike Fulton, Dr. Jeff Hyland, Dr. Steve Morton, Marion Sanders, Laura Webster & Dr. Ed Wirth
- 2006 – Bronze Medal Coastal Storms Project – Dr. Tom Siewicki
- 2006 – NOS Employee of the Year – Nancy Davey
- 2005 – NOAA “Best of the Best” Safety Award

- 2005 – Unit Citation for Oxford Staff, CDC, USDA and JH School of Public Health for 1<sup>st</sup> National Cryptosporidian Survey in Shellfish
- 2005 – NOS EEO Award – Joe Wade
- 2005 – Walter B. Jones Award – Heath Kelsey
- 2005 – NOS Employee of the Year – Karen Bauersfeld
- 2004 – NOS EEO Award – Rick Meitzler & Nancy Davey
- 2004 – Silver Medal – Dr. John Ramsdell
- 2004 – Bronze Medal – Martin Burnett
- 2004 – Bronze Medal EPA – Fred Kern
- 2004 – Pellston Workshop on Emerging Contaminants –Outstanding Graduate Student Award – Spencer Walse
- 2003 – NOAA Technology Transfer Award – Marine Biotoxins Program

## **PROFESSIONAL ACTIVITIES AND COMMUNITY SERVICE**

Charleston Area Chamber of Commerce, ThinkTec Board Member, 2000 - Present.

Charleston Federal Executive Association (FEA), 2001-Present, Combined Federal Campaign Coordinator for FEA.

Co-Chairman Combined Federal Campaign (Federal Civilian Agencies Lead), Greater Charleston Metro Area, 2002-2004.

Greater Charleston United Way Campaign Cabinet Member (Combined Federal Campaign Co-Director for Civilian Agencies), 2001-2003.

Palmetto Academy, Boys Varsity Basketball Coach, 2006-2007.

Rockville Presbyterian Church. 1993-96. Clerk of Session

Rockville Presbyterian Church. 1993-96. Elder

Slocum Lunz Foundation. Executive Director, 1995-2000.

Slocum Lunz Foundation. 1994-2000. Board of Directors.

SC Coastal Pesticide Advisory Committee. Appointed member in Fall 1988-Present. Committee work to address pesticide pollution issues in agriculture, vector control, and golf courses in coastal South Carolina. Comprised of Representatives from State and Federal Agencies. I have helped the states of Virginia and Florida to begin efforts to develop CPACs within these states.

Sea Island Academy, Board of Directors, 1991-97

Sea Island Academy, Treasurer 1994-97.

Sea Island Academy, Varsity Girls Assistant Basketball Coach. 1996-98.

Sea Island Academy, Elementary Boys Assistant Basketball Coach. 1995-2001.

Sea Island Academy, Boys Junior Varsity Basketball Coach, 2002—2004.

Sea Island Academy, Girls Junior Varsity Basketball Coach, 1995-96.

Sea Island Academy, Elementary Girls Basketball Coach, 1991-1994

SC Jr. Academy of Science. Lecturer and Laboratory Instructor/Mentor. 1993.

Low Country Little League, Assistant Coach. 1995-99. Tee-Ball, Machine Pitch and Minor Leagues.

Youth Basketball of America, Head Coach Lowcountry Heat - Traveling High School Boys Basketball Team, 2004-2006.

## **OTHER RECENT DISTINCTIONS**

**1. Notified by EPA Office of Pesticides as to major contribution by CCEHBR scientists relative to the banning of the pesticide endosulfan (see attachment #1).** This included a presentation to EPA Office of Pesticide Staff back in 2005 on endosulfan re-registration concerns of NOAA (e.g. this pesticide has caused more fish kills than all other pesticides combined and is the most frequently detected pesticides in ocean surface waters as well as ice) which led to EPA having to ultimately ban endosulfan.

### **Attachment #1**

#### **Endosulfan Email from EPA Office of Pesticides**

Thomas Steeger, Ph.D.

Senior Advisor

Environmental Fate and Effects Division

U. S. Environmental Protection Agency (MC 7507P)

Ariel Rios Building

1200 Pennsylvania Ave., NW

Washington DC 20460

14 June, 2010

Dr. Geoffrey I Scott

NOAA/NOS/NCCO

Center for Coastal Environmental

Health and Biomolecular Research

219 Ft. Johnson Road

Charleston, SC 29412

Dear Dr. Scott,

I do not know if you remember me, but for a brief period we interacted on a monitoring study of endosulfan you conducted in South Carolina/Florida. I am writing to acknowledge your role in helping to lay the foundation for what has led to the recent decision by the U. S. Environmental Protection Agency to issue a notice of intent to cancel endosulfan here in the U. S.. I am no longer part of the endosulfan team, however, I wanted to acknowledge your contribution to the team effort over past years.

Thank you.

Thomas Steeger, Ph.D.

Senior Advisor

Environmental Fate and Effects Division

U. S. Environmental Protection Agency (MC 7507P)

Ariel Rios Building

1200 Pennsylvania Ave., NW

Washington DC 20460

***Footnote: This represented over 25 years of research, numerous Masters Thesis and Dissertations, and 3 briefings to the EPA Office of Pesticides on endosulfan on the safety of this compound.***

**2. Greater Charleston Area Chamber of Commerce, ThinkTec Advisory Board – worked to better develop image of NOAA research centers within the greater Charleston area. This resulted in CCEHBR/HML being included in the tri-county chambers technical report as one of the new centers of research innovation. (See attachment 2)**

Attachment # 2

Greater Charleston Chamber of Commerce Report on Innovation at CCEHBR/HML (See page 16).

**INNOVATIVE ACTIVITY**

**THE RIGHT INGREDIENTS**

Photo: Courtesy of SDCRA



Completed in December 2009, the SCRA MUSC Innovation Center attracts and supports start-up companies with wet lab and equipment space, primarily in concert with entrepreneurs commercializing MUSC research. The Center welcomed its fifth tenant in mid-July.

Photo: Leslie Halpern, Charleston Regional Business Journal



The Clemson University Restoration Institute (CURRI) is building the world's largest test facility for next-generation wind turbine drivetrains after winning a highly competitive grant from the U.S. Department of Energy. Completion is targeted for third quarter 2012.



The Hollings Marine Lab, a Center of Excellence in NOAA's Ocean and Human Health Initiative, houses 130+ researchers, fellows, students and staff focused on the reciprocal relationships between organisms and their marine environment, with applications for human health and disease.

**INPUTS FOR FUTURE ECONOMIC DEVELOPMENT**



The City of Charleston, in partnership with MUSC and SCRA, plans to redevelop 42 acres downtown as an urban research park.

Photo: Brennan Whitney, Courtesy of MUSC.

**MUSC Research & Cumulative Awards**

2009	\$217 million
2008	\$202 million
2007	\$193 million
2006	\$188 million
2005	\$180 million

Source: MUSC Annual Report, Fiscal Year 2009



**Under Construction**  
MUSC is dramatically expanding its research space with two new facilities slated to open in the fall of 2011:

- 114,000-square-foot Drug Discovery Building
- 96,000-square-foot Bioengineering Building

16

3. Department of Commerce Green Innovation Award – for significant reductions in the carbon footprint of our research center in terms of increased recycling of organic chemicals and hazardous wastes.

(See Attachment 3 below)



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE  
Silver Spring, Maryland 20910

FEB 8 2011

MEMORANDUM FOR: David Kennedy, Ph.D.  
Assistant Administrator, NOS

THRU: Jean Durosko  
Management Analyst, NOS

FROM: Russell Callender, Ph.D. *RKC*  
Acting Director

SUBJECT: NCCOS Nomination for the 2011 DOC Environmental Awards

I am pleased to inform you that the National Ocean Service's National Centers for Coastal Ocean Science (NCCOS) is submitting the attached nomination recognizing its Waste Management Program in the category for the 2011 DOC Environmental Green Innovation Award. As a part of its Environmental Management System (EMS), the purpose of the Waste Management Program is to comprehensively manage key waste streams at NCCOS facilities through the establishment, implementation and documentation of objectives and targets that are measurable, practicable, and consistent with NOAA's environmental policy

The Green Innovation Award recognizes an innovation or idea with clear potential to transform the Federal community's overall energy and environmental performance, in keeping with the goals defined by E.O. 13514. This award will be presented to an individual or team for the development and execution of a novel new product, project, program, design, or revolutionary idea that facilitates sustainability in the Federal Government.

Both internal and external audits have found that the NCCOS EMS is in accordance with the requirements of Executive Order 13514, the ISO 14001:2004(E) Standard, and NOAA EMS Implementation Procedures. The audit record to date indicates that NCCOS operations are in conformance with all seventeen elements of the ISO 14001:2004(E) Standard. The EMS is a continuous improvement process, and as such, integrates sustainability into the policies, procedures and activities across our organization.

If you have any questions or need additional information, please contact me at 301-713-3020 ext 182 or the NCCOS Environmental Management System Coordinator, Bernie Gottholm at 301-713-3020 ext 186.

Attachment



Printed on Recycled Paper





### **Leading by Example to Transform Environmental Performance**

NOAA's National Centers for Coastal Ocean Science (NCCOS) is comprised of about 300 individuals spread across five research centers from South Carolina to Alaska. They conduct, support, and fund coastal and ocean science in the U.S. and around the world. Due to this broad environmental "footprint," they have always been mindful about their research' environmental impacts. Responding to Executive Order 13148 in January 2005, NCCOS's parent organization, the National Ocean Service, selected them to develop NOS's first Environmental Management System (EMS). NCCOS's EMS fulfilled not just the executive order, but EPA's Code of Environmental Management Principles, DOC's Environmental Management Manual, and NOAA's EMS requirements. In response to President Obama's new Executive Order 13514 on *Federal Leadership in Environmental, Energy, and Economic Performance*, NCCOS reaffirmed its EMS commitment to set a high bar to help make the organization as clean and green as possible by promoting innovative techniques and solutions.

The results speak for themselves.

Through their EMS, NCCOS is continually and transparently improving safety, health, and environmental performance by integrating environmental conservation into their research and technology transfer efforts. When an NCCOS lab disposes waste chemicals, they are picked up and blended with other flammable chemicals as a substitute for coal in a cement factory kiln, thereby saving carbon, something beyond the radar of most EMS programs. In these same labs, NCCOS scientists have substituted many necessary toxic chemicals with less-toxic ones, such as those containing mercury. They also eliminated chemicals because latest research showed they were not necessary for proper results.



NCCOS facilities dispose of a wide variety of wastes, many of which are regulated under the Resource Conservation and Recovery Act (RCRA), are harmful to the environment, and costly to dispose of. The purpose of the Waste Management Program is to comprehensively manage key waste streams at NCCOS facilities and enabling NCCOS to identify opportunities to minimize waste. In general, NCCOS aims to establish baselines for facility key waste streams and set objectives to improve the management of these so as to minimize social, economic, and environmental impacts.

NCCOS remains firmly committed to minimizing its environmental impacts and reducing hazards to public health by reducing the amount of hazardous substances, pollutants, and contaminants entering any waste stream prior to recycling, treatment, or disposal.

NCCOS is continually and transparently improving safety, health, and environmental performance by integrating "*Green Innovations*" into their research and technology transfer efforts. NCCOS is also leading by example by sharing best practices and lessons learned with other organizations, throughout NOAA offices and beyond. Who else benefits from NCCOS's "*Green Innovations*" by partnering with us and working at our facilities? Federal, state, tribal, contract, student, and volunteer scientists and others performing a variety of activities do. NCCOS partner with the National Institute of Standards and Technology, NOAA's National Marine Fisheries Service, the U.S. Coast Guard, National Park Service, National Institutes of Health, various state departments of natural resources, and colleges and universities throughout the country, such as the Medical University of South Carolina, University of Alaska, University of the Virgin Islands, College of Charleston, and others.

NCCOS developed a five year blanket purchase agreement (BPA) which allowed for the disposal of waste chemicals in a manner that saved the government money through a one-time bid for multiple year activities and improved NOAA efficiency. Best environmental management practices mandated by the BPA required chemicals be disposed of by reuse as fuel for cement kilns, recycled or reclaimed wherever possible, and contributed to sustainability of NCCOS' EMS. During the first four years of the contract 54,895 pounds of waste chemicals have been removed from NCCOS Laboratories (see Supporting Data). Currently, effectively 100% of hazardous and non-hazardous waste chemicals are being removed and disposed by recycling or some alternative form of beneficial use. In addition, an array of 16 chemical substitutions, reductions, eliminations and process and equipment changes have been implemented at these facilities. This has resulted in a **38% reduction in the purchase, use and disposal of chemicals**. The purchase agreement has been so effective that it is being expanded throughout NCCOS and its partners.

Through continual education and awareness programs, "*Green Innovations*" are used with NCCOS partners and alongside community members to achieve environmental excellence.

*Documented Chemical Substitutions, Chemical Reductions, Chemical Eliminations and Process and Equipment Changes*

- **Process and equipment change to eliminate the use of mercuric chloride.** This eliminated the risk of employee exposure and the purchase and disposal of a highly toxic hazardous chemical reagent known to affect the kidneys, central nervous system and cause birth defects. The chemical is also listed as an EPA Extremely Hazardous Substance.
- **Agar substitution in microbiological protocols to reduce the use of a hazardous chemical.** Use of an alternative culture media reduced the content of the extremely toxic chemical sodium azide by approximately 62% in prepared media. Sodium azide is an EPA Extremely Hazardous Substance known to affect the central nervous system, kidneys, and cardiovascular system.
- **Chemical substitution to eliminate the use of mercury-based tissue fixatives.** The use of the histological tissue fixative Z-Fix has eliminated the risk of employee exposure and the purchase and chemical disposal of an EPA Extremely Hazardous Substance, mercuric chloride, associated with harmful effects to the nervous system, liver and kidneys.
- **Process change to eliminate phenol in preparation of Ziehl-Neelson Stain.** This resulted in reducing the purchase and disposal costs associated with an extremely corrosive chemical known to be associated with harmful effects to the nervous system, liver and kidneys. Phenol is also listed as an EPA Extremely Hazardous Substance.
- **Substitution of sarcosyl-urea based solution for formalin to preserve fin-clip and tissue samples.** Sarcosyl-urea substitution allows the non-toxic preservation and digestion of tissue samples and DNA isolation by simple commonly used procedures instead of protocols using hazardous chemicals for extractions. Formaldehyde is listed as an EPA Extremely Hazardous Substance, is a severe poison and a suspected carcinogen.
- **Chemical substitution and process change for ethidium bromide.** SYBR-Green replaced the more toxic ethidium bromide in many molecular protocols and also reduced the amount of hazardous waste generated in other related processes. In addition to its extreme toxicity, ethidium bromide may cause heritable genetic damage.
- **Chemical substitution to eliminate a potentially carcinogenic, mutagenic, and toxic resin in transmission electron microscopy (TEM) preparations.** An alternative epoxy resin, Quetol-651, provides an acceptable and less hazardous substitute for Spurr's resin when embedding hard biological material for TEM.
- **Process change to use chemiluminescence instead of radioactive labeling protocols.** This process change resulted in improved employee safety in chemical handling and eliminates the generation of radioactive and carcinogenic hazardous waste.
- **Process change to reduce the use of nitric acid.** Implementation of a new microwave process has led to a >99% reduction in the purchase, use, and disposal of an extremely hazardous chemical known for its corrosive, reactive, oxidizer, and poisonous characteristics.
- **Reduction in use of organic solvents during solvent extraction.** The use of organic chlorinated solvents has been reduced approximately 84% by implementation of a Pressurized Fluid Extraction (PFE) technique and led to a cost savings in the purchase and disposal of approximately 84 L of flammable and toxic solvents annually.
- **Procedural modification to reduce solvent use.** Implementation has dramatically reduced organic solvent use 87%, thus saving approximately 140 L annually in the purchase and disposal of flammable and toxic organic solvents. In addition, migration to a small scale prep

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Liquid Chromatography (LC) technique has led to a 91% reduction in the use of chlorinated solvents. This resulted in a net cost savings in purchase and disposal of approximately 32 L of flammable and toxic chlorinated solvents annually.

- **Chemical elimination and process change involving 100% utilization of Liquid Chromatography (LC) and Mass Spectrometry (MS) for “methods development”.** New methodology utilizing LC/MS reduces an often multistep process to only one or two steps, representing a huge savings in time, chemicals used and savings in needed sample material. In addition, the use of chlorinated solvents was minimized to virtually zero thus reducing expensive purchase and disposal costs of flammable and toxic materials.
- **Equipment change to improve energy and chemical use efficiency.** A change to High Efficiency MVE Liquid Nitrogen Freezers allows samples to be maintained at a constant lower temperature and uses less liquid nitrogen than older freezers. This provides savings in chemical costs, and generates less cryogenic waste capable of causing severe frostbite.
- **Chemical substitution of 70% non-denatured ethanol in place of isopropanol or denatured ethanol.** This substitution allows the long-term storage of specimens in a less hazardous flammable chemical that also has less human deleterious toxicity.
- **Process change involving transfer of DNA from a gel to a charged membrane via southern blotting.** This process change allows the combining of chemical wastes of differing pH levels to form a neutral solution that is no longer hazardous and does not require special disposal.
- **Reduction of acid volumes and plastic waste.** The use of new quartz vessels has increased employee safety via elimination of the transfer of acidified samples and additionally resulted in reduction in the generation of plastic waste by approximately 300 plastic vials annually. The plastic vials cannot be recycled due to residual contaminants.

The nomination not only is to recognize the effective practices and “*Green Innovations*” that NCCOS has implemented in order to facilitate continued sustainability, but also to recognize that through its continual education and awareness programs, NCCOS “Green Innovations” are used with our partners and alongside community members to achieve environmental excellence.

## Supporting Data

Chart 1. NCCOS Chemical Disposal Data 2003-2006

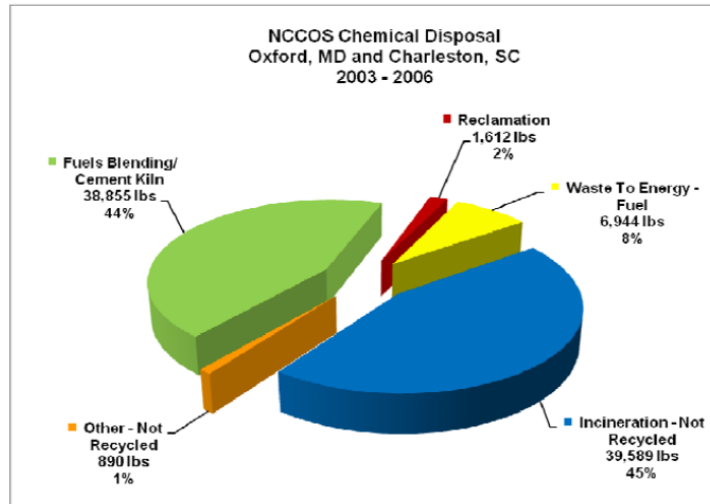


Chart 2. NCCOS Chemical Disposal Data 2007-2010 – 38% reduction in chemical waste disposal

