

CURRICULUM VITAE : 1975- 2015

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I. Education

1969 B. S. Springfield College (Biology; Summa Cum Laude)
1974 M. S. University of North Carolina at Chapel Hill (Marine Sciences)
1975 Ph.D. University of Florida (Environmental Engineering; Systems Ecology)

II. Professional Background

1969 - 1970 Faculty Research Assistant, University of Maryland, Natural Resources Institute, Chesapeake Biological Laboratory, Solomons, MD.

1975 - 1977 Research Associate, University of Maryland, Center for Environmental and Estuarine Studies, Chesapeake Biological Laboratory, Solomons, MD.

1978 - 1983 Assistant Professor, University of Maryland, Center for Environmental and Estuarine Studies, Chesapeake Biological Laboratory, Solomons, MD.

1983 Interim Head, University of Maryland, Center for Environmental and Estuarine Studies, Chesapeake Biological Laboratory, Solomons, MD (April-December).

1987 Sabbatical, ASKO Laboratory, University of Stockholm (April-October)

1983 - 1988 Associate Professor, University of Maryland, Center for Environmental and Estuarine Studies, Chesapeake Biological Laboratory, Solomons, MD.

1988-present Professor, University of Maryland, Center for Environmental Science, Chesapeake Biological Laboratory, Solomons, MD.

1993 -2001 Graduate Faculty, University of South Alabama, Mobile, Alabama

1992 - 2001 Fellow, Maryland International Institute for Ecological Economics

1992-present Graduate Faculty, University System of Maryland.

III. Research

A. Areas of Professional Expertise:

Estuarine ecology: Nutrient cycling; Benthic processes; Water quality studies
Seagrass ecology: Distribution and growth; Trophic processes
Ecosystem analysis: Estuary-land interactions; Materials budgets; Synthesis studies
Environmental education: Graduate, Undergraduate, Public Outreach

B. Publications:

1. Papers in Refereed Journals

Keefe, C.W. and W.R. Boynton. 1973. Standing crop in Chincoteague Bay salt marshes. *Chesapeake Sci.* 14:117-123. [CEES Contrib. No. 536].

Odum, H.T., W.M. Kemp, M. Sell, W.R. Boynton and M. Lehman. 1977. Energy analysis and the coupling of man and estuaries. *Environ. Manag.* 1:297-315.

Boynton, W.R., W.M. Kemp, C.G. Osborne, K.R. Kaumeyer and M.C. Jenkins. 1981. Influence of water circulation rate on *in situ* measurements of benthic community respiration. *Mar. Biol.* 65:185-190. [CEES Contrib. No. 1137]

Boynton, W.R., T.T. Polgar and H.H. Zion. 1981. Importance of juvenile striped bass food habits in the Potomac estuary. *Trans. Am. Fish. Soc.* 110:56-63. [CEES Contrib. No. 1124].

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Kemp, W.M. and W.R. Boynton. 1981. Influence of biological and physical processes on dissolved oxygen dynamics in an estuarine system: Implications for measurement of community metabolism. *Est. Coastal Mar. Sci.* 11:407-431. [CEES Contrib. No. 957].

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Setzler, E.M., J.A. Mihursky, K.V. Wood, W.R. Boynton, T.T. Polgar and G.E. Drewry. 1981. Major features of ichthyoplankton populations in the upper Potomac estuary: 1974-1976. The Early Life History of Fish: Recent Studies. *Rapp. P.-V. Cons.*

- Int. Explor. Mer* 178:204-206. [CEES Contrib. No. 869].
- D'Elia, C.F., D.M. Nelson and W.R. Boynton. 1983. Chesapeake Bay nutrient and plankton dynamics: III. The annual cycle of dissolved silicon. *Geochim. Cosmochim. Acta* 47: 1945-1955. [CEES Contrib. No. 1460].
- Kemp, W.M., R.W. Twilley, J.C. Stevenson, W.R. Boynton, and J.C. Means. 1983. The decline of submerged vascular plants in Chesapeake Bay: Summary of results concerning possible causes. *Mar. Tech. Soc. J.* 17(2):78-89. [CEES Contrib. No. 1406].
- Means, J.C., R. Wijayarathne, and W.R. Boynton. 1983. Fate and transport of selected pesticides in estuarine environments: Implications for ocean pollution. *Can. J. Fish. Aquat. Sci.* 40 (Suppl. 2):337-345. [CEES Contrib. No. 1140].
- Kemp, W.M. and W.R. Boynton. 1984. Spatial and temporal coupling of nutrient inputs to estuarine primary production: the role of particulate transport and decomposition. *Bull. Mar. Sci.* 35:522-535. [CEES Contrib. No. 1516].
- Officer, C.B., R.B. Biggs, J. Taft, L.E. Cronin, M.A. Tyler and W.R. Boynton. 1984. Chesapeake Bay anoxia: Origins, development, and significance. *Science* 223:22-27. [CEES Contrib. No. 1507].
- Ward, L., W.M. Kemp and W.R. Boynton. 1984. The influence of waves and seagrass communities on suspended estuarine embayment. *Mar. Geol.* 59:85-103. [CEES Contrib. No. 1509].
- Boynton, W.R. and W.M. Kemp. 1985. Nutrient regeneration and oxygen consumption by sediments along an estuarine salinity gradient. *Mar. Ecol. Prog. Ser.* 23:45-55. [CEES Contrib. No. 1596].
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- D'Elia, C.F., J.G. Sanders and W.R. Boynton. 1986. Nutrient enrichment studies in a coastal plain estuary: Phytoplankton growth in large-scale continuous cultures. *Can. J. Fish. Aquat. Sci.* 43(2):397-406. [CEES Contrib. No. 1696].
- Malone, T.C., W.M. Kemp, H. Ducklow, W.R. Boynton, J.H. Tuttle and R.B. Jonas. 1986. Lateral variations in the production and fate of phytoplankton in a partially stratified estuary. *Mar. Ecol. Prog. Ser.* 32:149-160. [CEES Contrib. No. 1718].
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- Koop, F., W.R. Boynton, F. Wulff and R. Carman. 1990. Sediment- water oxygen and nutrient exchanges along an environmental gradient in the Baltic Sea. *Mar. Ecol. Prog. Ser.* 63:65- 77. [CEES Contrib. No. 2139].
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- Kemp, W.M., P.A. Sampou, J.H. Garber, J. Tuttle, and W.R. Boynton. 1992. Seasonal depletion of oxygen from bottom waters of Chesapeake Bay: roles of benthic and planktonic respiration and physical exchange processes. *Mar. Ecol. Prog. Ser.* 85:137-152
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26(2A):171-185. [UMCES Contribution No. 3681-CBL].

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- Kemp, W.M. and W.R. Boynton. 2004. Productivity, trophic structure, and energy flow in the steady-state ecosystems of Silver Springs, *Florida Ecol. Model.* 178:43-49 [UMCES Contribution No. 3825-CBL].
- Hagy, J.D., W.R. Boynton, C.W. Keefe and K.V. Wood. 2004. Hypoxia in Chesapeake Bay, 1950-2001: Long-term change in relation to nutrient loading and river flow. *Estuaries* 27:634-658. [UMCES Contribution No. 3777-CBL].
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- Jordan, T. E., J. C. Cornwell, W. R. Boynton, and J. T. Anderson. 2008. Changes in phosphorus biogeochemistry along an estuarine salinity gradient: The iron conveyor belt. *Limnol. Oceanogr.* 53(1): 172-184.
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- Kemp, W. M. and W. R. Boynton. 2012. Synthesis in estuarine and coastal ecological research: What is it, why is it important, and how do we teach it? The H. T. Odum Synthesis Essay. *Estuaries and Coasts*. Vol. 35: 1-22.
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2. Books or Chapters

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- Boynton, W.R. 1977. An energy based evaluation of a proposed navigation dam on the Apalachicola River, Florida. Pp 158-171 **In:** R.J. Livingston and E. Joyce (eds.). *Proc. of the Conference on the Apalachicola drainage system*. Florida Marine Research Publ. No. 26.

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- Kemp, W.M., M.R. Lewis, J.J. Cunningham, J.C. Stevenson and W.R. Boynton. 1980. Microcosms, macrophytes and hierarchies: Environmental research in Chesapeake Bay. pp. 911-923. **In:** J. Giesy (ed.). *Microcosm research in ecology*. ERDA Conf. Series. NITS Contrib. No. 993. [CEES Contrib. No. 993].
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C. Grants and Contracts:

1. Awarded

Coupling of Carbon, Nitrogen and Phosphorus cycles in coastal ecosystems: climate effects and trophic implications. National Science Foundation (OPUS); February, 2014 – February, 2016. \$97,107 (Boynton with W. M. Kemp who receives equal funding).

FY16 Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes Component. MD DNR. (with J. Testa and L. Harris) Jul 2015 – Jun 2016. \$125,000.

Water Quality Monitoring Program for the sub-estuary comprised of Mill Creek, St. John's Creek, Back Creek, the Narrows and Solomons Harbor located in Dowell, Drum Point, Lusby, Olivet and Solomons, Calvert County, Maryland. Calvert County Commissioners; Jul 2015 – Jun 2016. \$27,427. (with L. Harris).

FY15 Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes Component. MD DNR. (with J. Testa and L. Harris) Jul 2014 – Jun 2015. \$125,000.

Water Quality Monitoring Program for the sub-estuary comprised of Mill Creek, St. John's Creek, Back Creek, the Narrows and Solomons Harbor located in Dowell, Drum Point, Lusby, Olivet and Solomons, Calvert County, Maryland. Calvert County Commissioners; Jul 2014 – Jun 2015. \$27,427. (with L. Harris).

Back River Sediment Flux Measurements in support of water quality modeling. Whitman, Requardt and Associated, LLC; August, 2014 – July, 2015. \$44,791 (with J. Testa).

FY14 Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes

WRB CV

Component. MD DNR. Jul 2013 – Jun 2014. \$125,000. Boynton and L. Wainger

Water Quality Monitoring Program for the subestuary comprised of Mill Creek, St. John's Creek, Back Creek, the Narrows and Solomons Harbor located in Dowell, Drum Point, Lusby, Olivet and Solomons, Calvert County, Maryland. Calvert County Commissioners; Jul 2013 – Jun 2014. \$27,427. Boynton

Water Quality Monitoring Program for the sub-estuary comprised of Mill Creek, St. John's Creek, Back Creek, the Narrows and Solomons Harbor located in Dowell, Drum Point, Lusby, Olivet and Solomons, Calvert County, Maryland. Calvert County Commissioners; Jul 2012 – Jun 2013. \$26,136. Boynton

FY13 Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes Component. MD DNR. Jul 2012 – Jun 2013. \$120,000. Boynton and L. Wainger

Forecasting watershed loading and lagoon response along the Delmarva Peninsula due to changing land-use and climate (L. Harris lead PI). Regional Sea Grant Program Feb 2012 – Feb 2013. \$106,814.

Water Quality Monitoring Program for the subestuary comprised of Mill Creek, St. John's Creek, Back Creek, the Narrows and Solomons Harbor located in Dowell, Drum Point, Lusby, Olivet and Solomons, Calvert County, Maryland. Calvert County Commissioners; Jul 2011 – Jun 2012. \$26,136 Boynton

Determining shallow water susceptibility to nutrient and sediment loads. MD-DNR. Aug 2011 – May 2012. \$41,165 L. Wainger and W. Boynton

FY12 Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes Component. MD DNR. Jul 2011 – Jun 2012. \$120,000. Boynton and L. Wainger

One-Day Water Quality Data Collection in the lower Patuxent River. Southern Maryland Electric Cooperative. Nov 2012 – Oct 2013. \$16,832. Boynton

FY11 Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes Component. MD DNR. Jul 2010 – Jun 2011. \$120,000. Boynton and L. Wainger

Determining shallow water susceptibility to nutrient and sediment loads. MD-DNR. Jul 2010 – Jun 2011 \$38,835 L. Wainger PI; W. Boynton.

Forecasting responses of Delmarva Lagoons to changing land use and climate (L. Harris PI; W. R. Boynton co-PI). NOAA-Sea Grant Feb 2009 – Dec 2011. No direct funding for Boynton

Modeling Ecological Responses to Climate and Nutrients. NOAA, Ecological Forecasting Program. 2006- 2012 \$2.28 million total; W.M. Kemp, Lead P.I., (Co-P.I. 5-yr program; Boynton total \$52,029/yr 2010-2012).

Water Quality Monitoring Program for the subestuary comprised of Mill Creek, St. John's Creek, Back Creek, the Narrows and Solomons Harbor located in Dowell, Drum Point, Lusby, Olivet and Solomons, Calvert County, Maryland. Calvert County Commissioners; May, 2009 – Jun, 2011. \$16,061 and \$19,032. Boynton

A field campaign to improve water quality models for the Potomac River estuary. DC – WASA. L. Harris PI; W. Boynton Co-PI. \$39,258. Aug 2010 – Jan 2011.

OMNIBUS 2010 - Regional: Forecasting the Response of Delmarva Lagoons to Changing Landuse and Climate: Alternatives Stable States & Recovery Trajectories. NOAA (Sea Grant). Feb. 2010 - Jan. 2011. \$25,000. (Co-Investigator with L. Harris and others).

2010 Water Quality Monitoring Program for the Miller Creek Sub-estuaries System Located in Southern Calvert County, Maryland. Calvert County Commissioners. Jul. 2010 - Jun. 2011. \$19,032. Boynton

Lab Analyses, Q/A, Data Management Activities and RV Service for Chesapeake Bay Monitoring Programs - Blind Audit. DNR, RAS. Jul. 2010 - Jun. 2011. \$4,727. Boynton

Lab Analyses, Q/A, Data Management Activities and RV Service for Chesapeake Bay Monitoring Programs - CBNERR Diel. DNR, RAS. Jul. 2010 - Jun. 2011. \$8,440. Boynton

Lab Analyses, Q/A, Data Management Activities and RV Service for Chesapeake Bay Monitoring Programs - CORE Chlorophyll Analyses. DNR, RAS. Jul. 2010 - Dec. 2011. \$6,171. Boynton

Lab Analyses, Q/A, Data Management Activities and RV Service for Chesapeake Bay Monitoring Programs - Mainstem Component. DNR, RAS. Jul. 2010 - Jun. 2011. \$107,483. Boynton

Lab Analyses, Q/A, Data Management Activities and RV Service for Chesapeake Bay Monitoring Programs - Shallow Water Monitoring Project. DNR, RAS. Jul. 2010 - Dec. 2011. \$33,991. Boynton

Lab Analyses, Q/A, Data Management Activities and RV Service for Chesapeake Bay Monitoring Programs - Tributary Monitoring Project. DNR, RAS. Jul. 2010 - Dec. 2011. \$160,065. Boynton

Maryland Chesapeake Bay Water Quality Monitoring Program, Ecosystem Processes Component. DNR, RAS. Jul. 2010 - Jun. 2011. \$120,000.00. Co-Investigator with L. Wainger

A Proposed Field Campaign to Improve Water Quality Model Parameterization in the Potomac River. D.C. Water and Sewer Authority. Aug. 2010 - Jan. 2011. \$54,857. Co-Investigator with L. Harris and J. Cornwell

Analytical and Boat Support for Field Efforts to Improve Water Quality Models in the Potomac River. D.C. Water and Sewer Authority. Oct. 2010 - Sep. 2011. \$7,000. Harris PI with Boynton and others

Analytical and Boat Support for Field Efforts to Improve Water Quality Models in the Potomac River. D.C. Water and Sewer Authority. Oct. 2010 - Sep. 2011. \$63,232. Harris PI with Boynton and others

Water Quality Characterization at Aberdeen Proving Ground, Maryland. ARMY (AGEISS). Jan. 2009 - Jan. 2010. \$21,652. Boynton

Forecasting the Response of Delmarva Lagoons to Changing Landuse and Climate: Alternatives Stable States & Recovery Trajectories. NOAA (Sea Grant). Feb. 2009 - Jan. 2011. \$25,000. Co-Investigator with L. Harris and others; no direct funding to Boynton

Response to Chesapeake Bay Ecosystems to Changes in Nutrient Loading: Trajectories, Thresholds, and Regulating Factors. EPA (CRC). Jun. 2009 - May 2010. \$12,000 Boynton, W. M. Kemp and D. Brietberg

Lab Analyses, Q/A, Data Management and RV Services - Blind Audit. DNR, RAS. Jul. 2009 - Jun. 2010. \$4,727. Boynton

Lab Analyses, Q/A, Data Management and RV Services - CBNERR/Winter's Run Project. DNR, RAS. Jul. 2009 - Dec. 2010. \$14,137. Boynton

Lab Analyses, Q/A, Data Management and RV Services - CORE Chlorophyll Analyses. DNR, RAS. Jul. 2009 - Dec. 2010. \$6,172. Boynton

Lab Analyses, Q/A, Data Management and RV Services - Mainstem Component. DNR, RAS. Jul. 2009 - Jun. 2010. \$144,350. Boynton

Lab Analyses, Q/A, Data Management and RV Services - Shallow Water Monitoring. DNR, RAS. Jul. 2009 - Dec. 2010. \$141,222. Boynton

Maryland Chesapeake Bay Water Quality Monitoring Program, Ecosystem Processes Component, FY10. DNR, RAS. Jul. 2009 - Jun. 2010. \$110,000 Co-Investigator with L. Wainger

2009 Water Quality Monitoring Program for the Miller Creek Sub-estuaries System Located in Southern Calvert County, Maryland. Calvert County Commissioners. Jul. 2009 - Dec. 2010. \$16,061. Boynton

Lab Analyses, Q/A, Data Management and RV Services - Tributary Monitoring Program. DNR, RAS. Aug. 2009 - Dec. 2010. \$189,621 Boynton

An Assessment of Processes Controlling Benthic Nutrient Fluxes in the Caloosahatchee River and Estuary and the St. Lucie River and Estuary. South Florida Water Management District. Dec. 2007 - Jun. 2008. \$21,631. Boynton

2008 Baltimore Harbor/Back River PCB Survey Analytical Support. MDE. Apr. 2008 - Jun. 2010. \$240,495. Boynton

2008-2009 MDE TMDL Project - Group 1 - PCB Analytical Support. MDE. Apr. 2008 - Jun. 2010. \$168,233. Boynton

Water Quality Monitoring for the Mill Creek Estuary Located in Southern Calvert County, Maryland. Calvert County Commissioners. May 2008 - Jun. 2010. \$13,556. Boynton

Maryland Chesapeake Bay Water Quality Monitoring Program: Ecosystems Processes Component, FY09. DNR, RAS. Jul. 2008 - Jun. 2009. \$155,663. Boynton

Lab Analyses, Q/A, Data Management and RV Services - CBNERR/Winter's Run Project. DNR, RAS. Jul. 2008 - Dec. 2009. \$10,085. Boynton

Lab Analytical Services: Support Coastal Bays Environmental Monitoring Program. DNR, RAS. Jul. 2008 - Sep. 2009. \$45,945. Boynton

Lab Analyses, Q/A, Data Management and RV Services - Mainstem Component. DNR, RAS. Jul. 2008 - Jun. 2009. \$137,706. Boynton

Lab Analyses, Q/A, Data Management and RV Services - Shallow Water Monitoring. DNR, RAS. Jul. 2008 - Dec. 2009. \$173,338. Boynton

Lab Analyses, Q/A, Data Management and RV Services - Tributary Monitoring Program. DNR, RAS. Jul. 2008 - Dec. 2009. \$208,451. Boynton

Targeted Watershed Project - Evaluating Progress Towards TMDL. MDE. Jul. 2008 - Jun.

WRB CV

2009. \$21,876. Boynton

Lab Analytical Services for Development of TMDL. MDE. Jul. 2008 - Sep. 2009. \$163,350
Boynton

2008-2009 Corbiculla sp. Caging Experiments in Northern Tidal Potomac - Organics
Analytical Support. MDE. Oct. 2008 - Dec. 2010. \$106,860. Boynton

Monitoring of Sediment Oxygen and Nutrient Exchange Measurement in Eastern Bay, Tangier
Sound and tributaries in support of TMDL development 2009, Phase I, Field and
Laboratory Activities. MDE. Oct. 2008 - Dec. 2009. \$96,497. Boynton

Monitoring of Sediment Oxygen and Nutrient Exchange Measurement in Eastern Bay, Tangier
Sound and tributaries in support of TMDL development 2009, Phase II: Analysis &
Database Expansion. MDE. Nov. 2008 - Dec. 2009. \$62,428. Boynton

Water Quality Monitoring Program for Mill Creek, St. John's Creek, Back Creek, the Narrows
and Solomons Harbor. Calvert County Commissioners. Jul. 2007 - Jul. 2009. \$13,201.
Boynton

Chesapeake Bay Biomonitoring Program and Corsica Watershed Restoration Project:
Ecosystems Processes Component, FY08. DNR, RAS. Jul. 2007 - Dec. 2008. \$155,675.
Boynton

Chesapeake Bay Monitoring Program - Blind Audit Component. DNR, RAS. Jul. 2007 - Jun.
2008. \$4,727. Boynton

Lab Analyses, Q/A, Data Management and RV Services - Blind Audit. DNR, RAS. Jul. 2008 -
Jun. 2009. \$4,728. Boynton

Chesapeake Bay Monitoring Program - CBNERR Component. DNR, RAS. Jul. 2007 - Jun.
2008. \$30,823. Boynton

Maryland Coastal Bay Water Quality Analysis, FY08. DNR, RAS. Jul. 2007 - Sep. 2008.
\$55,771. Boynton

Chesapeake Bay Monitoring Programs - Mainstem Component. DNR, RAS. Jul. 2007 - Jun.
2008. \$134,206. Boynton

Chesapeake Bay Monitoring Program - Shallow Water Monitoring. DNR, RAS. Jul. 2007 -
Dec. 2008. \$156,504. Boynton

Chesapeake Bay Monitoring Program - Tributary Monitoring Component. DNR, RAS. Jul.

2007 - Dec. 2008. \$189,106. Boynton

Corsica River Watershed Implementation Monitoring Program- Analytical Support. MDE. Jul. 2007 - Jun. 2008. \$4,992. Boynton

Targeted Watershed Project - Analytical Support. MDE. Jul. 2007 - Jun. 2008. \$22,947. Boynton

Lab Analytical Services for Development of TMDL. MDE. Jul. 2007 - Sep. 2008. \$212,969. Boynton

Sediment Nutrient and Oxygen Exchange Measurements from Chesapeake Bay, Tributary Rivers and Maryland Coastal Bays. MDE. Jun. 2006 - Dec. 2007. \$86,852. Boynton

Water Quality Monitoring Program for Mill Creek, St. John's Creek, Back Creek, the Narrows and Solomons Harbor. Calvert County Commissioners. Jul. 2006 - Jul. 2008. \$12,530. Boynton

Maryland Chesapeake Bay Water Quality Monitoring Program: Ecosystems Processes Component, FY07 . DNR, RAS. Jul. 2006 - Sep. 2007. \$134,647. Boynton

Lab Analytical Services for Development of TMDL. MDE. Jul. 2006 - Jun. 2008. \$109,400. Boynton

An Assessment of Spatial and Temporal Variation in Surface Water Quality in Maryland Coastal Bays 2005. DNR, RAS. Jun. 2005 - Dec. 2006. \$53,466. Boynton

Monitoring of Sediment Oxygen and Nutrient Exchanges in Maryland's Upper and Lower Western Shore Tributaries 2005 in Support of TMDL Development. MDE. Jun. 2005 - Jun. 2006. \$143,044. Boynton

Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes Component, FY06. DNR, RAS. Jul. 2005 - Dec. 2006. \$182,598. Boynton

Water Quality Monitoring for Subestuary, Mill Creek, St. John's Creek and Solomons Harbor located in Dowell, Drum Point, Lusby, Olivet and Solomons, Calvert County, Maryland. Calvert County Commissioners; 1 Jul. 2004 - 30 Jun. 2005; \$12,000. Boynton

An Assessment of SAV Epiphyte Loading and Water Quality Conditions in the Lower Potomac River in 2003. Potomac Crossing Consultants. RKK Engineers; Apr. 2004 - May 2005; \$38,735. Boynton

Collaborative Research. Across the Salinity Transition: Changes in N and P biogeochemistry along an estuarine salinity gradient. National Science Foundation; Sept. 2004 - Aug. 2005; \$73,000. (Co-Principal Investigator T. Jordan and J. Cornwell).

Ecosystem Variability and Estuarine Fisheries: A synthesis. NOAA Oct. 2002 - Sept. 2005; \$64,000. Boynton Co-P.I.

Water Quality Analysis at Blossom Point, MD, 2004. U.S. Army; Apr. 2004 - Dec. 2005; \$12,360. Boynton

Lab Analysis, Q/A, Data Management, RV Services: Shallow Water Monitoring. MD DNR; Jul. 2004 - Dec. 2005; \$15,528. Boynton

Lab Analysis, Q/A, Data Management, RV Services: EPC Monitoring Component. MD DNR; Jul. 2004 - Dec. 2005; \$17,728. Boynton

Lab Analysis, Q/A, Data Management, RV Services: CBNERR/Winter's Run Component. MD DNR; Jul. 2004 - Dec. 2005; \$27,603. Boynton

Lab Analysis, Q/A, Data Management, RV Services: River Input Component. MD DNR; Jul. 2004 - Dec. 2005; \$1,383. Boynton

Lab Analysis, Q/A, Data Management, RV Services: Tributary and Shallow Water Monitoring Project Component. MD DNR; Jul. 2004 - Dec. 2005; \$297,693. Boynton

Lab Analysis, Q/A, Data Management, RV Services: Blind Audit. MD DNR; Jul. 2004 - Dec. 2005; \$4,727. Boynton

Lab Analysis, Q/A, Data Management, RV Services: Mainstem Component. MD DNR; Jul. 2004 - Dec. 2005; \$119,674. Boynton

FY05 Chesapeake Bay Monitoring Program - Ecosystem Processes Element. MD DNR, Resource Assessment Service; Jul. 2004 - Sept. 2005; \$208,841. Boynton

Analysis of Water Quality Samples Collected for Targeted Watershed Project. MD DNR; Apr. 2004 - Mar. 2005; \$11,194. Boynton

Chemical Analysis Activities in MD's Chesapeake Bay and tributaries. MD DNR; Apr. 2004 - Dec. 2004; \$39,596. Boynton

Analysis of Water Quality Samples Collected for Bishopville Prong Project. MD DNR; Jan. 2004 - Sept. 2004; \$4,676. Boynton

Coastal Bays Water Quality Analysis, 2004. MD DNR; Apr. 2004 - Sept. 2005; \$58,717.
Boynton

An Assessment of Spatial and Temporal Variation in Surface Water Quality in Maryland's Coastal Bays, 2004. MD DNR, Resource Assessment Service; Apr. 2004 - Sept. 2005; \$84,669. Boynton

Integrated Modeling System of Ecology of the Patuxent Basin. MD Dept. of Environment; Sept. 2004 - Jun. 2005; \$21,000. Boynton with T. Fisher and W. M. Kemp

Water Quality Analysis for Upper Pocomoke River Project. MD DNR; Aug. 2004 - Jul. 2005; \$6,459. Boynton

Sediment Phosphorus Flux-pH Interactions in the Tidal Freshwater Potomac River Estuary. Interstate Commission on the Potomac River Basin; Apr. 2004 - Dec. 2005; \$90,520. Boynton

An Assessment of Spatial and Temporal Variation in Surface Water Quality in the Maryland Coastal Bays 2003. MD DNR, Resource Assessment Service; Apr. 2003 - Sept. 2004; \$209,783 Boynton

Coastal Bays Water Quality Analysis. MD DNR, Resource Assessment Service; Apr. 2003 - Sept. 2004; \$51,124. Boynton

Targeted Watershed Project Water Quality Sample Analysis. MD DNR, Chesapeake and Coastal Watershed Service; Apr. 2003 - Mar. 2004; \$15,092 Boynton

Monitoring of Sediment Oxygen and Nutrient Exchanges in the Maryland's Coastal Bays in Support of TMDL Development 2003. MD Dept. of the Environment; Jun. 2003 - Jun. 2005; \$120,237. Boynton

Ecosystem Variability and Estuarine Fisheries: A Synthesis. Dept. of Commerce, NOAA; Oct. 2002 - Sept. 2004; \$64,238.00. Boynton Co-Principal Investigator

Laboratory Analysis of Near Coastal Nutrient Samples. Environmental Protection Agency; May 2002 - Apr. 2003; \$66,225 total for 2 years. Boynton

An Assessment of SAV Epiphyte Loading and Local Water Quality Conditions at Blossom Point, Maryland 2002. U.S. Army Research Laboratory, Aelphi, MD; Jul. 2002 - Jun. 2003; \$30,309. Boynton

Collaborative Research: Across the Salinity Transition and Changes in N and P Biogeochemistry Along an Estuarine Salinity Gradient. National Science Foundation;

Sept. 2003 - Aug. 2004; \$73,700. Co-Principal Investigator with T. Jordan and J. Cornwell.

An Assessment of Spatial and Temporal Variation in Surface Water Quality in Shallow Littoral Zones Adjacent to Selected DoD Facilities in Chesapeake Bay. U.S. Navy; May 2003 - May 2006; \$79,267. Boynton

An Assessment of SAV Epiphyte Loading at Blossom Point, Maryland 2003 and 2004. U.S. Army Research Laboratory, Adelphi, MD; Sept. 2003 - Aug. 2004; \$29,992. Boynton

Laboratory Analyses, Q/A Data Management Activities and RV Services - Mainstem Project. MD DNR, Resource Assessment Service; Jul. 2003 - Dec. 2004; \$114,993. Boynton

Laboratory Analyses, Q/A Data Management Activities and RV Services - Blind Audit Program. MD DNR, Resource Assessment Service; Jul. 2003 - Dec. 2004; \$4,278. Boynton

Laboratory Analyses, Q/A Data Management Activities and RV Services - Tributary and Shallow Water Monitoring Project. MD DNR, Resource Assessment Service; Jul. 2003 - Dec. 2004; \$219,911. Boynton

Laboratory Analyses, Q/A Data Management Activities and RV Services - River Input Component. MD DNR, Resource Assessment Service; Jul. 2003 - Dec. 2004; \$1,311. Boynton

Laboratory Analyses, Q/A Data Management Activities and RV Services - Shallow Water Project - Continuous Monitoring Component. MD DNR, Resource Assessment Service; Jul. 2003 - Dec. 2004; \$39,926. Boynton

Laboratory Analyses, Q/A Data Management Activities and RV Services - Water Quality Mapping Monitoring Component (DATAFLOW). MD DNR, Resource Assessment Service; Jul. 2003 - Dec. 2004; \$41,067. Boynton

Laboratory Analyses, Q/A Data Management Activities and RV Services - Winter's Run Watershed Component (Otter Point Creek). MD DNR, Resource Assessment Service; Jul. 2003 - Dec. 2004; \$14,586. Boynton

FY04 Biomonitoring Program - Ecosystem Processes Component. MD DNR, Resource Assessment Service; Jul. 2003 - Sept. 2004; \$200,083 Boynton

Laboratory Analytical Services for Maryland's TMDL's. MD Dept. of the Environment; May 2003 - Jun. 2006; \$507,633, total for 3 years. Boynton

Water Quality Monitoring Program for Mill Creek, St. John's Creek and Solomons Harbor located in Dowell, Drum Point, Lusby, Olivet and Solomons, Calvert County, Maryland. Calvert County Commissioners; Jul. 2003 - Jun. 2004; \$7,000. Boynton

Scale-Dependent Spatial Patterns Observed in a Variety of Estuarine Systems: Phase One, Data Identification, Acquisition, Standardization and Preliminary Examination. EPA (MEERC); Jan. 1998 - Jul. 2002; \$82,514. Boynton

Refinement of a method to evaluate suitable SAV restoration sites with regard to epiphyte light attenuation. Sea Grant; Jul. 1999 - Jan. 2001; \$8,830. Boynton

Monitoring of sediment oxygen and nutrient exchanges in the Northeast Elk, Bohemia and Sassafras River Estuaries in support of TMDL development. MD Dept. of the Environment; Jun. 2000 - Jun. 2001; \$99,445. Boynton

Technical support services in modeling and monitoring for the Chesapeake Bay Program Office. EPA, Chesapeake Bay Program Office; Jun. 2000 - May 2001; \$73,000. Boynton

Nitrogen and Phosphorus Budgets for the Patuxent River Estuary: Significant Improvements for Science, Management and Public Understanding. UMCES Integration and Application Network (IAN); Jul. 2000 - Jun. 2001; \$11,295. Boynton

Maryland Chesapeake Bay Water Quality Monitoring Program: Ecosystem Processes Component (EPC). MD DNR; Jul. 2000 - Sept. 2001; \$200,049. Boynton

Solomons Harbor Study. Calvert County Board of County Commissioners; Jul. 2000 - Mar. 2001; \$7,000. Boynton

High frequency data collection and satellite telemetry for time relevant water quality and habitat monitoring assessments in the Chicamicomico, Magothy and Patapsco River Estuaries. MD DNR; Jul. 2000 - Sept. 2001; \$36,845. Boynton

High frequency data collection and satellite telemetry for time relevant water quality and habitat monitoring assessments in the Pocomoke River Estuary. MD DNR; Jul. 2000 - May 2001; \$110,368. Boynton

An assessment of seasonal SAV epiphyte loading at Blossom Pt., MD. Dept. of the Army; Jul. 2000 - Dec. 2001; \$35,861. Boynton

Establishing the Coastal Technologies Center: Targeting monitoring needs of coastal managers by establishing a testbed for demonstrating, evaluating and verifying innovative technologies in monitoring sensors, platforms and software. Dept. of Commerce,

NOAA; Aug. 2000 - Jul. 2001; \$72,425. Tenore and Boynton

An assessment of SAV Epiphyte Loading and Local Water Quality Conditions in the Lower Potomac River. Potomac Crossing Consultants. RKK Engineers; Oct. 2000 - Jun. 2002; \$67,992. Boynton

Water Quality Analysis in Support of the Targeted Watershed Project. MD DNR, Chesapeake and Coastal Watershed Service; Jan. 2001 - Dec. 2002; \$31,923. Boynton

Maryland Chesapeake Bay Water Quality Biomonitoring Program. Ecosystem Processes Component FY-02. MD DNR; Jun. 2001 - Sept. 2002; \$220,683. Boynton

Monitoring Sediment Oxygen and Nutrient Exchanges in the Chester River Estuary in Support of TMDL Development. MD Dept. of the Environment; Jun. 2001 - Jun. 2002; \$100,003. Boynton

Biomonitoring Program: Development and Operation of the Continuous Environmental Monitoring Program for Real Time Habitat Assessment in Chesapeake Bay tributaries. MD DNR; Jul. 2001 - Jun. 2002; \$68,491. Boynton

Laboratory Analytical Services to Provide Data for the Development of Computer Models for the Calculation of Total Maximum Daily Loads. MD Dept. of the Environment; Jul. 2001 - Jun. 2002; \$219,543.00. Boynton

2001 Solomons Harbor Study. Calvert County Board of County Commissioners; Jul. 2001 - Jul. 2002; \$7,000. Boynton

Laboratory Analyses, Q/A Data Management Activities and R/V Services - Patuxent Project. MD DNR, Resource Assessment Service; Jul. 2001 - Sept. 2002; \$152,830. Boynton

Laboratory Analyses, Q/A Data Management Activities and R/V Services - Blind Audit. MD DNR, Resource Assessment Service. Jul. 2001 - Sept. 2002. \$4,115. Boynton

Laboratory Analyses, Q/A Data Management Activities and R/V Services - Mainstem Project. MD DNR; Jul. 2001 - Sept. 2002; \$67,466. Boynton

Laboratory Analyses, Q/A Data Management Activities and R/V Services - Pfiesteria Project. MD Dept. of Natural Resources, Resource Assessment Service; Jul. 2001 - Sept. 2002; \$269,667. Boynton

Laboratory Analyses, Q/A Data Management Activities and R/V Services - Pfiesteria Sediment Analysis Project. MD DNR, Resource Assessment Service; Jul. 2001 - Sept. 2002; \$3,818. Boynton

Water Quality Analyses for the Upper Potomac River Project. MD DNR, Chesapeake and Coastal Watershed Service; Aug. 2001 - Apr. 2002; \$25,432. Boynton

Chemical Analyses on Water Quality Samples Collected from the Coastal Bays. MD DNR, Resource Assessment Service; Aug. 2001 - Sept. 2002; \$34,638. Boynton

Nutrient Flux Estimation from the Sediments in the Anacostia River: Phase I. District of Columbia, Health Dept.; Sept. 2001 - Sept. 2003; \$99,991. Boynton

Development of Integrated Modeling System of Watershed and Estuarine Ecology for Management of the Patuxent Basin. MD Dept. of the Environment; Sept. 2001 - Jun. 2002; \$20,954. T. Fisher PI; Boynton and others Co-PIs

FY-03 Biomonitoring Program: Ecosystem Processes Component. MD DNR; Jul. 2002 - Sept. 2003; \$211,311. Boynton

Water Analysis to Support the Otter Point Creek Restoration Partnership of the Chesapeake Bay National Estuarine Research Reserve. MD DNR; May 2002 - Mar. 2003; \$5,486. Boynton

Laboratory Analyses, Q/A Data Management Activities and R/V Services for FY03 Chesapeake Bay Monitoring Program: Blind Audit Program. MD DNR; Jul. 2002 - Sept. 2003; \$4,115. Boynton

Laboratory Analyses, Q/A Data Management Activities, R/V Services for FY03 Chesapeake Bay Monitoring Program: Pfiesteria Harmful Algal Bloom Project. MD -DNR; Jul. 2002 - Sept. 2003; \$69,925. Boynton

Laboratory Analyses, Q/A Data Management Activities, R/V Services for FY03 Chesapeake Bay Monitoring Program: Pfiesteria Monitoring. MD -DNR; Jul. 2002 - Sept. 2003; \$178,068. Boynton

Laboratory Analyses, Q/A Data Management Activities, R/V Services for FY03 Chesapeake Bay Monitoring Program: Pfiesteria Sediment Analysis Project. MD- DNR; Jul. 2002 - Sept. 2003; \$3,878. Boynton

Chemical Analyses of Water Quality Samples Collected from the Coastal Bays. MD- DNR; Jul. 2002 - Sept. 2003; \$51,123 Boynton

Monitoring of Sediment Oxygen and Nutrient Exchanges in the Potomac River Estuary in Support of TMDL Development. MD Dept. of the Environment; Jul. 2002 - Jun. 2003; \$119,980. Boynton

FY03 Biomonitoring Program: Construction of a DATAFLOW High Resolution Mapping System and Wireless Telemetry Equipment. MD DNR; Jul. - Sept. 2003; \$49,728. Boynton

An Assessment of SAV Epiphyte Loading and Local Water Quality Conditions in the Lower Potomac River in 2002. Potomac Crossing Consultants. Jul. 2002 - May 2003. \$30,510. Boynton

Alliance for Coastal Technologies: Supporting the Monitoring/Surveillance Needs of Coastal Environmental Managers and Scientists. Dept. of Commerce, NOAA. May 2002 - Apr. 2003. \$91,412. Co-Principal Investigator with K. Tenore, PI

Water Quality Analysis at Blossom Point, Maryland 2002. U.S. Army Research Laboratory. Apr. 2002 - Mar. 2003. \$13,218. Boynton

Water Quality Study for Mill Creek, St. John's Creek and Solomons Harbor Study located in Dowell, Drum Point, Lusby, Olivet and Solomons, Calvert County, Maryland. Calvert County Board of County Commissioners; Jul. 2002 - Jun. 2003; \$7,000. Boynton

Collaborative Research: Across the Salinity Transition and Changes in N and P Biogeochemistry Along an Estuarine Salinity Gradient. National Science Foundation; Sept. 2002 - Aug. 2003; \$69,975. Co-Principal Investigator with T. Jordan and J. Cornwell

Development of an Integrated Modeling System of Watershed and Estuarine Ecology for Management of the Patuxent Basin. MD Dept. of the Environment; Jul. 2002 - June 2003; \$21,340. T. Fisher, PI, Boynton Co-Principal Investigator with others

Analytical Service to Provide Data for the Development of Computer Models to Calculate TMDL's. MD Dept. of the Environment; Jul. 2002 - Jun. 2003; \$228,150. Boynton

Analysis of Water Quality Samples Collected for the Lake Lingnanore/Bishopville Pond Project. MD DNR, Chesapeake and Coastal Watershed Service; Jan. - Dec. 2003; \$7,889. Boynton

Trophic Transfers in Larger Estuarine Ecosystems: Pulsed Inputs, Physical Features and Biological Patchiness. National Science Foundation. September, 1995 – September, 2001. \$455,326. Boynton, Kemp, Roman, Houde and Boicourt.

Refinement of a method to evaluate suitable SAV restoration sites with regard to epiphyte light attenuation. Sea Grant. July, 1999 - January, 2001. \$8,830. Boynton

Monitoring of sediment oxygen and nutrient exchanges in the Northeast Elk, Bohemia and Sassafras River Estuaries in support of TMDL development. Maryland Department of the Environment. June, 2000 - June, 2001. \$99,445. Boynton

Technical support services in modeling and monitoring for the Chesapeake Bay Program Office. EPA, Chesapeake Bay Program Office. June , 2000 - May, 2001. \$73,000. Boynton

Water quality and living resources in Chesapeake Bay: Modeling potential responses to nutrient loading reductions. UMCES Integration and Application Network (IAN). July, 2000-June, 2001. \$18,650 Boynton

Nitrogen and phosphorus budgets for the Patuxent River Estuary: significant improvements for science, management and public understanding. UMCES Integration and Application Network (IAN). July, 2000-June, 2001. \$11,295. Boynton

Maryland Chesapeake Bay water quality monitoring program: ecosystem processes component. Maryland Department of Natural Resources. July, 2000 - September, 2001. \$200,049. Boynton

Establishing the Coastal Technologies Center: Targeting monitoring needs of coastal managers by establishing a testbed for demonstrating, evaluating and verifying innovative technologies in monitoring sensors, platforms and software. Department of Commerce, NOAA. August, 2000 - July, 2001. \$72,425. Tenore and Boynton

An assessment of SAV epiphyte loading and local water quality conditions in the lower Potomac River. Potomac Cross Consultants. RKK Engineers. October, 2000-June, 2001. \$25,992 Boynton

High frequency data collection and satellite telemetry for time relevant water quality and habitat monitoring assessments in Chesapeake Bay tributaries. Maryland Department of Natural Resources. March, 2000 - November, 2000. \$265,422. Boynton

High frequency data collection and satellite telemetry for time relevant water quality and habitat monitoring assessments in the Chicomicomico, Magothy and Patapsco River Estuaries. Maryland Department on Natural Resources. July, 2000 - September, 2000. \$36,845. Boynton

High frequency data collection and satellite telemetry for time relevant water quality and habitat monitoring assessments in the Pocomoke River Estuary. Maryland Department on Natural Resources. July, 2000 - September, 2000. \$110,368. Boynton

An assessment of seasonal SAV epiphyte loading at Blossom Pt., MD. Department of the

Army. July, 2000 - September, 2000. \$24,492. Boynton

Scale-Dependent Spatial Patterns Observed in a Variety of Estuarine Systems: Phase One, Data Identification, Acquisition, Standardization and Preliminary Examination. EPA (MEERC). January, 1998 - January, 2000. \$44,469. Boynton (Co-PI).

Time-Relevant Data Collection to Supplement Maryland's *Pfiesteria* Monitoring in Chesapeake Bay. Maryland Department of Natural Resources. Resource Assessment Service. January, 1998 - September, 1998. \$32,024. Boynton

A mapping survey of the sediment-water oxygen and nutrient exchanges in the Upper Chesapeake Bay. Maryland Environmental Service. July, 1998 - April, 1999. \$43,254. Boynton

Technical Support Services in Modeling and Monitoring for the Chesapeake Bay Program Office. EPA, Chesapeake Bay Program Office. July, 1998 - May, 1999. \$68,309. Boynton

Maryland Chesapeake Bay Water Quality Monitoring Program. Ecosystem Processes Component. Maryland Department of Natural Resources. July, 1998 - September, 1999. \$194,855. Boynton

Time Relevant Data to Supplement Maryland's *Pfiesteria* Monitoring in Chesapeake Bay. Maryland Department of Natural Resources. FY 99. July, 1998 - September, 1999. \$52,976. Boynton

A time-relevant data collection of physical, chemical and biological parameters to monitor and characterize a tributary targeted for Maryland's *Pfiesteria* monitoring. Maryland Department of Natural Resources. April, 1999 - September, 2000. \$53,338. Boynton

Solomons Harbor Study. Calvert County Board of County Commissioners. July, 1999 - June, 2000. \$7,000. Boynton

FY-00 Biomonitoring program: Time relevant data collection of physical, chemical and biological parameters to monitor and characterize a tributary targeted for Maryland's *Pfiesteria* monitoring program in Chesapeake Bay. Maryland Department of Natural Resources. July, 1999 - June, 2000. \$80,882. Boynton

Monitoring of sediment oxygen and nutrient exchanges in the Pocomoke River estuary in support of TMDL development. Maryland Department of the Environment. July, 1999 - June, 2000. \$78,778. Boynton

Maryland Chesapeake Bay water quality monitoring program: ecosystem processes component.

Maryland Department of Natural Resources. July, 1999 - September, 2000. \$191,427. Boynton

Laboratory analysis, Q/A, data management, and RV services for Chesapeake Bay mainstem program. Maryland Department of Natural Resources, Resource Assessment Service. July, 1999-September, 2000. \$145,355. Boynton

Laboratory analysis, Q/A, data management, and RV services for Patuxent River project. Maryland Department of Natural Resources, Resource Assessment Service. July, 1999-September, 2000. \$67,466. Boynton

Laboratory analysis, Q/A, data management, and RV services for blind audit program. Maryland Department of Natural Resources, Resource Assessment Service. July, 1999-September, 2000. \$3,740. Boynton

Laboratory analysis, Q/A, data management, and RV services for *Pfiesteria* project. Maryland Department of Natural Resources, Resource Assessment Service. July, 1999-September, 2000. \$292,191. Boynton.

Laboratory analysis, Q/A, data management, and RV services for *Pfiesteria* sediment analysis project. Maryland Department of Natural Resources, Resource Assessment Service. July, 1999-September, 2000. \$3,818. Boynton

Examination of Field Data for Scale-Dependent Relations. EPA (MEERC). January, 1997 - December, 1997. \$25,000. Boynton.

Chesapeake Bay Ecosystem Modeling Program. June, 1997 - May, 2001. \$20,000. Boynton.

Sediment Water Oxygen and Nutrient Exchanges at the G-West Controlled Bottom Placement Study. Maryland Environmental Service. June, 1997 - February, 1998. \$60,721. Boynton.

Trophic Transfers in Larger Estuarine Ecosystems: Pulsed Inputs, Physical Features and Biological Patchiness. June, 1997 - September, 1998. \$46,206. Boynton

An Environmental Evaluation of the Tidal Back River Tributary. Baltimore City (through Whitman, Requart and Associates). June, 1997 - August, 1997. \$150,060. Boynton.

1997 Solomons Harbor Study. Calvert County Board of County Commissioners. July, 1997 - March, 1998. \$7,000. Boynton.

Ecosystem Models of the Patuxent River Estuary Relating Nutrient Loadings to Production of Selected Fish Populations. Environmental Protection Agency. May, 1996 - April, 1997.

\$39,868. Boynton

Ecosystem Models of the Chesapeake Bay Relating Nutrient Loadings, Environmental Conditions and Living Resources. Environmental Protection Agency. May, 1996 - April, 1997. \$15,000. Boynton.

Sediment Water Oxygen and Nutrient Exchanges at Site 104 Open Water Placement Area. Department of Natural Resources/Maryland Environmental Service. May, 1996 - October, 1997. \$195,890. Boynton.

Sediment Water Oxygen and Nutrient Exchanges at the G-West Berm and Hydraulic Placement Area. Maryland Environmental Service. June, 1996 - February, 1997. \$55,699. Boynton.

Sediment Water Oxygen and Nutrient Exchanges at G-East Placement Area and at Site 92. Maryland Environmental Service. June, 1996 - September, 1997. \$46,168. Boynton.

FY-97 Biomonitoring Program - Ecosystem Processes Component (EPC), Sediment Oxygen and Nutrient Exchanges (SONE) Component. Department of Natural Resources. July, 1996 - September, 1997. \$215,063. Boynton.

Maryland Chesapeake Bay Water Quality Monitoring Program - Ecosystem Processes Component. Department of Natural Resources. July, 1997 - September, 1998. \$192,279. Boynton

1996 Solomons Harbor Study. Calvert County Board of County Commissioners. July, 1996 - March, 1997. \$7,000. Boynton.

The Chesapeake Bay Observing Program: Implementation and Prediction. Department of Commerce, NOAA. September, 1996 - August, 1997. \$61,919. Boynton.

Ecosystem Monitoring of Chesapeake Bay: Calibration of Benthic Organism Ecology to Nutrients, Salinity, Sedimentation Rate, Temperature and Dissolved Oxygen. Department of the Interior, USGS. September, 1996 - September, 1997. \$11,446. Boynton.

Ecological Economic Modeling and Valuation of Ecosystems. Environmental Protection Agency. September, 1992 - January, 1996. \$90,000. Costanza and Boynton.

Community Metabolism of Chesapeake Bay: Importance of Shallow Water Regions. Sea Grant. February, 1994 - January, 1996. \$8,132. Boynton.

Sediment- Water Oxygen and Nutrient Exchanges at G-West Berm and Hydraulic Placement Area. Maryland Environmental Service. June, 1995 - February, 1996. \$52,801.

Boynton.

Solomons Harbor Study. Calvert County Board of County Commissioners. July, 1995 - March, 1996. \$7,000. Boynton.

Chesapeake Bay Ecosystem Modeling Program 1995-1996. Environmental Protection Agency. Ma, 1995 - April, 1996. \$25,000. Boynton.

Effects of Macroenthos on Flux Rates. Department of the Army. Corps of Engineers. June, 1995 - June, 1996. \$24,496. Boynton

Sediment-Water Oxygen and Nutrient Exchanges in the Tidal Patapsco/Baltimore Harbor and Back River Tributaries. July, 1994 - June, 1996. Maryland Department of the Environment. \$77,000. Boynton.

The Chesapeake Bay Observing System: Implementation and predication. U.S. Department of Commerce. NOAA. September, 1994 - July, 1996. \$60,966. Boynton.

Maryland Chesapeake Bay Water Quality Monitoring Program (FY-96 Biomonitoring Program). July, 1995 - September, 1996. Department of Natural Resources, Tidewater Administration. \$226,306. Boynton.

Maryland Chesapeake Bay Water Quality Monitoring Program (FY-96 Biomonitoring Program - EPC Component. Addendum.). July , 1995 - September , 1996. Department of Natural Resources, Tidewater Administration. \$13,057. Boynton.

Ecosystem Models of the Patuxent River Estuary Relating Nutrient Loading to Production of Selected Fish Populations. Department of Natural Resources. Octobe, 1993 - September, 1996. \$15,868. Boynton.

Coastal Bays Characterization Project. Department of Natural Resources. May, 1996 - September, 1996. \$51,978. Boynton.

Sediment-Water Fluxes and Sediment Analysis in Chesapeake Bay: Tidal Fresh Potomac River and Maryland Mainstem. Department of the Army. May, 1994 - July, 1995. \$63,915. Boynton.

Solomons Harbor Study. Calvert County Board of County Commissioners. July, 1995 - March, 1996. \$7,000. Boynton.

Sediment-Water Fluxes and Sediment Analysis in Chesapeake Bay: Tidal Fresh Potomac River and Maryland Mainstem. Department of the Army. May, 1994-July, 1995. (Additional funds awarded) \$20,037. Boynton.

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Trophic Transfers in Larger Estuarine Ecosystems: Pulsed Inputs, Physical Features and Biological Patchiness. National Science Foundation. October, 1994-September, 1995. \$174,697. Boynton.

Sediment-Water Oxygen and Nutrient Exchanges at the Pooles Island (G-West) Dredge Disposal Area. June, 1994-February, 1995. Maryland Department of the Environment. \$36,558. Boynton.

Chesapeake Bay Water Quality Monitoring Program. (Ecosystem Processes Component). FY-95. Maryland Department of the Environment. July, 1994-September, 1995. \$226,306. Boynton.

Chesapeake Bay Water Quality Monitoring Program. (Ecosystem Processes Component. Addendum). FY-95. Maryland Department of the Environment. January, 1995-August, 1995. \$11,551. Boynton.

Solomons Harbor Water Quality Monitoring Program. Calvert County Board of County Commissioners. May, 1994-April, 1995. \$7,000. Boynton.

The Chesapeake Bay Observing System: Implementation and predication. U.S. Department of Commerce. NOAA. September, 1993-September, 1995. \$55,426. Boynton.

Chesapeake Bay Water Quality Monitoring Program. (Ecosystem Processes Component).FY-93. Maryland Department of the Environment. July , 1993-June, 1994. \$226,072. Boynton.

Responses of a Major Land Margin Ecosystem to Changes in Terrestrial Nutrient Inputs. National Science Foundation. September, 1988-November, 1994. Capone and Boynton. \$359,357.

Sediment-Water Oxygen and Nutrient Exchanges at the Pooles Island (G-West) Dredge Disposal Area. Dec., 1992-Feb., 1994. Maryland Department of the Environment. \$31,199. Boynton.

Ecological Economic Modeling and Valuation of Ecosystems. Environmental Protection Agency. September, 1992 - January, 1994. \$219,124. Costanza and Boynton.

Solomons Harbor Water Quality Monitoring Program. Calvert County Board of County Commissioners. July, 1993-March, 1994. \$5,514. Boynton.

Analysis of *in-situ* scale of variability in a Chesapeake Bay ecosystem. Environmental Protection Agency. (MEERC) June, 1993-September, 1994. \$6,950. Boynton.

Chesapeake Bay Water Quality Monitoring Program. (Ecosystem Processes Component). FY-93. Maryland Department of the Environment. July, 1992-June, 1993. \$222,538. Boynton.

Chesapeake Bay Water Quality Monitoring Program. (Ecosystem Processes Component). FY-92. Maryland Department of the Environment. July, 1991-June, 1993. \$211,123. Boynton.

Pooles Island Dredge Spoil Disposal Site Study. Maryland Department of Natural Resources, Maryland Environmental Service. February, 1992-December, 1993. \$45,000. Boynton.

Direct Measurements and Biogeochemical Controls of Sediment-Water Flux of Trace Metals from Estuarine Sediments. January, 1993 - June, 1993. University of Maryland System. Sea Grant College. \$8,991. Cornwell and Boynton.

Ecosystem Models of the Patuxent River Estuarine. Environmental Protection Agency through VIMS. May, 1992 - May, 1993. \$19,300. Boynton.

Scales of Variability of Chesapeake Bay Monitoring Data. Environmental Protection Agency. July, 1992 - March, 1993. \$39,992. Boynton, Tuttle, and Bosworth.

Chesapeake Bay Water Quality Monitoring Program. (Ecosystem Processes Component). Maryland Department of the Environment. July, 1990-June, 1992. \$238,077. Boynton.

1991 Solomons Harbor Study. July, 1991-August, 1991. Calvert County Board of County Commissioners. \$5,500. Boynton.

Pooles Island Sediment. Maryland Department of the Environment. June, 1991-June, 1992. \$15,000. Boynton.

Sediment-Water Oxygen and Nutrient Exchanges--Pooles Island. June, 1991-June, 1993. Maryland Department of the Environment. \$13,500. Boynton.

Ecosystem Models of the Patuxent River Estuary Relating Nutrient Loadings to Production of Selected Fish Populations. July, 1991-August, 1992. Maryland Department of Natural Resources, Tidewater Administration. \$13,000. Boynton.

Direct Measurements and Biogeochemical Controls of Sediment-Water Flux of Trace Metals from Estuarine Sediments. January, 1992 - December, 1992. University of Maryland System. Sea Grant College. \$8,991. Boynton.

Pooles Island Unconfined Placement Study. Maryland Environmental Service. Department of Natural Resources. February, 1992-May, 1992. \$9,965. Jesien, Hocutt and Boynton.

Ecosystem Models of the Patuxent River Estuarine. Environmental Protection Agency through VIMS. March, 1992-December, 1992. \$6,475. Boynton.

Pooles Island Unconfined Placement Study. Maryland Environmental Service; Department of Natural Resources. June, 1992-September, 1992. \$16,766. Jesien, Hocutt and Boynton.

Solomons Harbor Water Quality Monitoring Program. Calvert County Board of County Commissioners. Jul, 1992-October, 1992. \$5,514. Boynton.

Ecosystem Models of the Patuxent River Estuary Relating Nutrient Loading to Production of Selected Fish Populations. Department of Natural Resources. August, 1991-August, 1992. \$10,306. Kemp, Boynton and Brandt.

Solomons Harbor Monitoring Program. Calvert County Board of County Commissioners. July 1990 - March 1991. \$12,425. Boynton.

Anacostia River Sediment Processes. Washington Metropolitan Area Council of Governments. July 1990 - March 1991. \$15,259. Sampou and Boynton.

Ecosystems Processes Component. Chesapeake Bay Water Quality Monitoring Program. MD Dept. of Environment, OEP. July 1990-June 1991. \$238,077. Boynton, Garber, and Kemp.

Macrofaunal effects on nitrification and its coupling to denitrification in coastal marine sediments. National Science Foundation. January, 1989- June,1990. \$68,866. Kemp and Boynton.

Further development of nutrient budgets for four regions of Northern Chesapeake Bay. EPA (through the University of Rhode Island). January, 1989 - June, 1990. \$21,509. Boynton and Garber.

Ecosystems Processes Component. Chesapeake Bay Water Quality Monitoring Program. MD Dept. of Environment, OEP. July 1988-June 1989. \$220,000. Boynton, Garber, and Kemp.

EPA sediment data collection program: Sediment-water flux component. EPA/Md. Department of Environment. April, 1988 - December, 1989. \$149,624. Boynton and Garber.

Ecosystems Processes Component. Chesapeake Bay Water Quality Monitoring Program. MD Dept. Health & Mental Hygiene, OEP. July 1986-June 1988. \$220,000. Boynton,

Kemp and Garber.

Relative Roles of Benthic vs Pelagic Oxygen-Consuming Processes in the seasonal cycle of Chesapeake Bay anoxia. NOAA Sea Grant College. Kemp (\$41,188) and Boynton (\$2,162).

Ecosystems Processes Component. Chesapeake Bay Water Quality Monitoring Program. MD Dept. Health & Mental Hygiene, OEP. July 1986-June 1987. \$195,000. Boynton and Kemp.

Ecosystems Processes Component. Chesapeake Bay Water Quality Monitoring Program. MD Dept. Health & Mental Hygiene, OEP. July 1985-June 1986. \$181,000. Boynton and Kemp.

Relative Roles of Benthic vs Pelagic Oxygen Consuming Processes in establishing and maintaining anoxia in Chesapeake Bay. Sept. 1985-August 1986. NOAA Maryland Sea Grant. \$30,000. Kemp and Boynton.

Ecosystem processes component: Chesapeake Bay Water Quality Monitoring Program, MD Dept. Health and Mental Hygiene, OEP. July 1984-June 1985. Boynton and Kemp. \$172,000.

Light-nutrient interactions in relation to production of *Thalassia testudinum* in a tropical estuary. NSF International. Nov. 1983-Sept. 1985. \$12,720. Kemp, Boynton and Stevenson.

Seston dynamics in the lower Susquehanna River. MD Power Plant Siting Program/MML. Aug. 1983-June 1984. Boynton. \$19,898.

Nutrient, oxygen and productivity survey of the Bush River Estuary. MD Power Plant Siting Program. Jan-Dec. 1984. Boynton. \$56,661.

Nutrient dynamics in estuarine ecosystems. MD Sea Grant. Jan- Dec. 1984. D'Elia, Sanders and Boynton. \$8,000.

Nutrient enrichment and phytoplankton dynamics in the Patuxent River. MD Dept. Health and Mental Hygiene, OEP. Jan 1984 - Dec. 1984. D'Elia, Sanders and Boynton. \$25,200 for CBL; \$34,858 for BERL.

The impact of non-point nutrient enrichment on the dynamics of natural phytoplankton. Water Resources Res. Center, Univ. MD. Aug, 1983-Aug, 1984. D'Elia, Boynton, Sanders. \$23,121.

Hart and Miller Island Containment Facility Investigations. Project III. Nutrient and Productivity Studies. Aug. 1982-August 1983. Boynton, Keefe, Wood. \$57,648.

Ichthyoplankton sampling methodologies review. Environmental Center, Martin Marietta Corporation. Sept. 1982-June 1983. Boynton. \$5,000.

Denitrification and related processes in estuarine sediments: Controlling factors and implications for management of nutrient wastes. University of Maryland Sea Grant Program. January 1983-March 1984. Kemp, Twilley, Boynton and Stevenson. \$25,000.

Oxygen metabolism of Conowingo Pond. Academy of Natural Sciences of Philadelphia. July 1982-Dec. 1982. Boynton. \$14,800.

Recycling of nitrogen and phosphorus in sediments of the Choptank River Estuary. University of Maryland Sea Grant Program. Jan. 1982-March 1983. Kemp, Boynton, Stevenson, and Twilley. \$42,000.

Plankton/Benthic community metabolism of the Conowingo Reservoir, Maryland. Radiation Management Corp. Dunmore, PA. June 1981-February 1982. Boynton and Sanders. \$60,158.

Assessment of the impact of electric power plants upon aquatic biota. Martin Marietta Corporation. July 1981-June 1982. MMC/Boynton. \$12,609.

A review of relative water quality and ecological data for the Patuxent River with respect to limiting nutrient questions. Maryland Dept. of Health and Mental Hygiene. Nov. 1981- Feb. 1982. D'Elia and Boynton. \$7,500.

Benthic nutrient studies in the Lower Patuxent River. Maryland Department of Natural Resources, Water Resources Administration. June 1980-Sept. 1981. D'Elia, Boynton and Kemp. \$53,391.

Sediment/water Interactions, Experiment 2, Chesapeake Bay Nutrient Study. USEPA - Chesapeake Bay Program. June 1980-July 1981. D'Elia, Boynton and Kemp. \$61,000.

Estuarine community dynamics in relation to Power Plant Operations: Benthic Program. Maryland Department of Natural Resources, Energy and Coastal Zone Administration. July 1980-June 1981. Boynton and Kemp. \$58,000.

A demonstration ecosystem model for submerged aquatic vegetation in Chesapeake Bay. Maryland Dept. of Natural Resources, Tidewater Administration. April 1980-July 1981. Kemp, Boynton and Hermann. \$30,000.

Further investigations and data synthesis concerning submerged aquatic vegetation in Chesapeake Bay. USEPA - Chesapeake Bay Program. December 1980-December

1981. Kemp, Stevenson, Boynton, Means, Twilley and Jones. \$212,695.
- Influence of submerged aquatic vegetation on nitrogen cycling in Chesapeake Bay. USEPA - Chesapeake Bay Program. EPA Grant CR 805932-01-2-Task 9. April 1980-October 1981. Stevenson, Kemp, Means and Boynton. \$15,000.
- Herbicides, turbidity and nutrients in relation to submerged aquatic vegetation in Chesapeake Bay. USEPA - Chesapeake Bay program. EPA Grant No. CR 805932-01-02- Task 7. April 1980-October 1981. Boynton, Means, Kemp, Stevenson, and Twilley. \$101,515.
- A demonstration ecosystem model for submerged aquatic vegetation in Chesapeake Bay. Maryland Dept. of Natural Resources Coastal Zone Program. Feb. 1980-May 1981. Kemp and Boynton. \$30,050.
- Ecological effects of nuclear steam electric station operations on estuarine systems. U.S. Dept. of Energy. April 1978- April 1979. Mihursky, Heinle, and Boynton. \$107,000.
- Submerged aquatic vegetation in Chesapeake Bay. USEPA - Chesapeake Bay Program. EPA Grant No. R8059322010. July 1978-Dec. 1980. Stevenson, Kemp and Boynton. \$639,311.
- Energetic characteristics of coupled urban and rural areas in a coastal region: The Patuxent River, Maryland. Calvert County Board of County Commissioners. Mihursky and Boynton. June 1978 - Sept. 1978. \$1,000.
- Ecological effects of nuclear steam electric station operations on estuarine systems. ERDA Agency No. E(40-1)4328. April 1977-Oct. 1978. Mihursky, Heinle, and Boynton. \$167,950.
- Ecological effects of nuclear steam electric station operations on estuarine systems. ERDA Agency No. E(40-1)4328. Jan. 1976-Dec. 1976. Mihursky, Heinle, and Boynton. \$111,950
- Estuarine community dynamics in relation to power plant operations. Power Plant Siting Program, Maryland Department of Natural Resources, Agency No. P2-72- 02(80) (B). July 1979-June 1980. Boynton, Holland, Kemp and Mihursky. \$198,378.
- Estuarine community dynamics in relation to power plant operations. Power Plant Siting Program, Maryland Department of Natural Resources, Agency No. P2-72- 02(79) Mod. 6. July 1978-Aug. 1979. Mihursky and Boynton. \$426,629.
- Estuarine community dynamics in relation to power plant operations. Power Plant Siting Program, Maryland Department of Natural Resources, Agency No. P2-72- 02(78) Mod.

4 and 5. Jan. 1978-March 1979. Mihursky, Boynton, Kemp, D'Elia and Setzler. \$259,371.

Estuarine community dynamics in relation to power plant operations. Power Plant Siting Program, Maryland Department of Natural Resources, Agency No. P2-72- 02(77), Extension P2-72-02-Mod 3. July 1977-June 1978. Mihursky, Boynton, Fritsche, Heinle, Setzler and Wilson. \$211,000.

Estuarine community dynamics in relation to power plant operations. Power Plant Siting Program, Maryland Department of Natural Resources, Agency No. P2-72- 02(77). Jan. 1977-Dec. 1977. Mihursky, Boynton, Morgan, Heinle, Setzler, and Wilson. \$174,000.

Estuarine community dynamics in relation to power plant operations. Power Plant Siting Program, Maryland Department of Natural Resources, Agency No. P2-72- 02(77) Mod. 2. July 1976-June 1977. Mihursky and Boynton. \$199,183.

Estuarine community dynamics in relation to power plant operations. Power Plant Siting Program, Maryland Department of Natural Resources, Agency No. P2-72- 02(76). Jan. 1976-Dec. 1976. Mihursky and Boynton. \$101,366.

2. Submitted: Three proposals are in development and submissions are scheduled from February-April, 2016

D. Invited Seminars and Presentations

Odum, H.T., W.M. Kemp, M. Sell and W.R. Boynton. 1975. Energy analysis and the coupling of man and estuaries. Estuarine Research Federation, Galveston, TX.

Boynton, W.R. 1976. Environmental impact of freshwater wetland alterations on coastal estuaries. Technical Planning Seminar. Georgia Department of Natural Resources, Savannah, GA. (Panel Member)

Boynton, W.R. and M. Homer. 1977. Ecosystem simulation modeling in a canonical approach to food web analysis. Botany Department, University of Maryland.

Boynton, W.R. 1977. A summary of a population study of the striped bass in the Potomac River Estuary. Dept. of Environmental Engineering Sciences, University of Florida.

Boynton, W.R. Ecole Europeenne D'Ete E'Environment Modeling the Sea. Invited Lecturer. Louvaine-La-Neuve, Belgium. July, 1977

Boynton, W.R. 1977. The value of freshwater in estuaries. University of Florida Sea Grant Program, Tampa, FL. Panel Participant and Invited Speaker.

- Mihursky, J.A., W.R. Boynton, and W.M. Kemp. 1978. Benthic metabolism studies. Seminar on Water Quality in the Tidal Potomac. U.S. Dept. Interior and U.S. Geological Survey, Reston, VA.
- Setzler, E.M., W.R. Boynton, J.A. Mihursky, T.T. Polgar and K.V. Wood. 1978. Spatial and distribution patterns of striped bass ichthyoplankton and juveniles in the Potomac Estuary. Seminar on Water Quality in the Tidal Potomac. U.S. Dept. of Interior and U.S. Geological Survey. Reston, VA.
- Boynton, W.R., W.M. Kemp and J.C. Stevenson. 1978. Systems ecology of the Chesapeake Bay. University of Pennsylvania Regional Sciences Department. Philadelphia, PA.
- Boynton, W.R. 1979. Nutrient cycling in coastal ecosystems. St. Mary's College, St. Mary's, MD.
- Setzler, E.M., J.A. Mihursky, K.V. Wood, W.R. Boynton, T.T. Polgar and G.E. Drewry. 1979. Major features of ichthyoplankton populations in the Upper Potomac Estuary: 1974-1976. Early Life History of Fish. Woods Hole, MA.
- Boynton, W.R. 1980. Ecosystems of the Chesapeake Bay. A seminar series sponsored by the National Institutes of Health. Bethesda, MD.
- Boynton, W.R. 1981. Nutrient processes in estuarine ecosystems. Beta Beta Beta Lecture Series, Gettysburg College, Gettysburg, PA.
- Boynton, W.R. 1981. Nutrient dynamics and primary production in Chesapeake Bay. Chesapeake Bay Foundation, Annapolis, MD.
- Kemp, W.M. and W.R. Boynton. 1982. A submerged aquatic vegetation model for Chesapeake Bay. Marine Ecosystem Modeling Workshop. Environmental Data Information Service (NOAA). Frederick, MD.
- Boynton, W.R. 1982. Phytoplanktonic productivity in coastal and estuarine ecosystems. Smithsonian Institution. Edgewater, MD.
- Boynton, W.R. 1982. Factors regulating primary production in a global sampling of estuarine ecosystems. MEES 698. Estuarine Microbiology. Solomons, MD.
- Boynton, W.R. 1983. A review of potential factors causing the decline of submerged vascular plant communities in Chesapeake Bay. CEES Annual Faculty Meeting, Frostburg, MD.
- Boynton, W.R. 1984. Results of estuarine microcosm studies in the Patuxent River estuary.

Office of Environ. Programs, Baltimore, MD.

- Boynton, W.R. 1984. Submerged aquatic vegetation revisited. Ches. Biol. Lab. Seminar Series. CBL.
- Boynton, J.E. and W.R. Boynton. 1984. Influence of current velocity on sediment-water nutrient exchanges. AERS Salisbury, MD.
- Kemp, W.M. and W.R. Boynton. 1984. Nutrient cycling productivity patterns in estuarine environments. AERS Salisbury, MD.
- Boynton, W.R., W.M. Kemp and J.C. Stevenson. 1984. Causes and consequences of SAV decline in northern Chesapeake Bay. Richmond, VA.
- Boynton, W.R. and W.M. Kemp. 1985. A comparison of geographic characteristics and emergent ecological features among Chesapeake Bay Tributaries. Biannual ERF Conference, Durham, N.H.
- Boynton, W.R. 1985. Data requirements for ecological models of estuaries. NOAA/EPA Workshop. Washington, D.C.
- Boynton, W.R. 1985. Recent trends in estuarine monitoring. NOAA/EPA Estuary of the Month Program. Washington, D.C.
- Boynton, W.R. 1985. Research needs of Chesapeake Bay. Sigma-Chi Invited Lecture. University of Maryland, College Park, MD.
- Boynton, W.R. 1987. The causes and consequences of the Chesapeake Bay seagrass decline. ASKO Laboratory, University of Stockholm, Stockholm, Sweden.
- Boynton, W.R. 1987. The causes and consequences of the Chesapeake Bay seagrass decline. Department of Limnology, University of Lund, Lund, Sweden.
- Boynton, W.R. 1987. Eutrophication in coastal marine systems; trends and the N vs. P issue. Department of Marine Sciences, University of Lund, Lund, Sweden.
- Boynton, W.R. 1987. Eutrophication in coastal marine systems; trends and the N vs. P issue. Institute of Marine Ecology, University of Stockholm, Stockholm, Sweden.
- Boynton, W.R. 1987. Ecological trends and consequences associated with eutrophication in coastal waters. Zoology Department, University of Stockholm, Stockholm, Sweden.
- Boynton, W.R. 1987. General ecological characteristics and sediment-water exchanges in a

nutrient-rich estuary. Alfred Wagner Institute for Polar and Marine Research, Bremerhaven, West Germany.

- Boynton, W.R. 1987. On sediment-water nutrient exchanges and transformations along estuarine gradients. Department of Microbiology, University of Goteburg, Goteburg, Sweden.
- Boynton, W.R. 1987. An approach for evaluation of ecological impacts in estuarine ecosystems. Eco-Eco group. University of Stockholm, Stockholm, Sweden.
- Boynton, W.R. 1987. Causes and consequences of the seagrass decline in Chesapeake Bay. Monitoring and management of coastal marine systems; eutrophication example. Kristineberg Laboratory, Swedish Royal Academy of Science, Kristineberg, Sweden.
- Boynton, W.R. 1987. Water quality monitoring ecological characteristics and a strategy for estuarine nutrient management. Freshwater Institute, University of Copenhagen, Denmark.
- Boynton, W.R. and J.H. Garber. 1988. Nutrient budgets for the northern Chesapeake Bay and three tributary estuaries. 1988 ASLO Winter Meeting. San Francisco, CA.
- Garber, J.H. and W.R. Boynton. 1988. Spatial and temporal characteristics of three sub-estuaries. 1988 ASLO Winter Meeting. San Francisco, CA.
- Boynton, W.R. 1989. Nutrient Budgets of Chesapeake Bay. Chesapeake Bay Program Monitoring Committee. August, 1989.
- Kemp, W.M., T.C. Malone, W.C. Boicourt, and W.R. Boynton. 1989. Estuarine modulation of nutrient transport from land to sea: retention, assimilation and export. ERF, Baltimore, MD.
- Kemp, W.M., P.A. Sampou, J.M. Caffrey, M.S. Mayer, K. Hendriksen, and W.R. Boynton. 1989. Nitrogen cycling in Chesapeake Bay sediments: balance between regeneration and denitrification. ERF, Baltimore, MD.
- Kemp, W.M. and W.R. Boynton. 1989. An integrated view of ecological processes in mesohaline Chesapeake Bay: materials budget, and simulation models. San Francisco, CA.
- Boynton, W.R. 1990. Law and policy of the coast. University of Maryland Law School. Baltimore, MD.
- Garber, J.H. and W.R. Boynton. 1990. Ecosystem-level responses to estuarine eutrophication: comparative analysis of relationships between nutrient loading and nutrient

- concentrations, algal productivity and biomass, nutrient recycling and export rates in Northern Chesapeake Bay (USA) and three tributary estuaries. *Marine Coastal Eutrophication*. Bologna, Italy.
- Boynton, W.R. 1990. Human activities and seagrass ecology in coastal areas. Department of Life Sciences. University of Arizona. Flagstaff, AZ.
- Boynton, W.R. 1990. Proteus: depicting the configuration of material transformation in Chesapeake Bay. Atlantic Estuarine Research Society meeting. Gloucester Point, VA.
- Boynton, W.R. 1990. Chesapeake Bay ecosystem and the disappearance of the SAV's. *Field and Laboratory Techniques in Marine Science Education*, MEES 498M, Solomons, MD.
- Boynton, W.R. 1990. Ecosystem level responses to estuarine eutrophication: a comparative analysis. University of Maryland, HPEL, Seminar Series. Cambridge, MD
- Garber, J.H. and W.R. Boynton. 1990. Comparative ecosystem studies: toward an estuarine "Vollenweider plot": analysis of relationships between nutrient loading and algal biomass in Chesapeake Bay. NEERS Bi-Annual Meeting. Narragansett, RI.
- Boynton, W.R., W.M. Kemp, J.M. Barnes, J.L. Cowen, S. Stammerjohn, L. Matteson, and F. Rohland. 1990. Long-term characteristics and trends of benthic nutrient fluxes in northern Chesapeake Bay. *New Perspectives in the Chesapeake System: A Research and Management Partnership*. CRC. Baltimore, MD.
- Boynton, W.R. 1990. Keeping the Chesapeake Bay Foundation in the know. Invited seminar and panel discussion. Annapolis, MD.
- Cowan, J.L. and W.R. Boynton. 1990. Spatial and temporal variations in 1989 of sediment-water oxygen and nutrient exchanges along the mainstem Chesapeake Bay; a component of the LMER research project. NSF-sponsored LMER group meeting. HPEL, Cambridge, MD.
- Garber, J.H. and W.R. Boynton. 1991. Ecosystem-level responses to estuarine eutrophication: Comparative analysis of relationships between nutrient loading and algal biomass in Chesapeake Bay and four tributary estuaries. Tampa Bay Watershed Symposium. February 27-March 1, 1991.
- Boynton, W.R. 1991. An example of comparative ecology: Nutrient loading and algal standing crop. Benedict Estuarine Research Laboratory. April 11, 1991.
- Mihursky, J., W.R. Boynton and W.M. Kemp. 1991. Report to the Chesapeake Bay Program's

Executive Council as members of the scientific and technical advisory committee.
August 6, 1991.

Cowan, J.L.W., W.R. Boynton, J.C. Cornwell, L. Rosman and W.M. Kemp. Sediment-water exchanges of nutrients and oxygen along an estuarine salinity gradient. 11th International Estuarine Research Conference, San Francisco, November 10-14, 1991.

Kemp, W.M. and W.R. Boynton. Processes of recycling, organic transformation, and exchanges between uplands and the sea. 11th International Estuarine Research Conference, San Francisco, November 10-14, 1991.

Kemp, W.M., E.M. Smith and W.R. Boynton. Role of plankton community metabolism in regulating sedimentation of organic matter in a coastal environment. 11th International Estuarine Research Conference, San Francisco, November 10-14, 1991.

Boynton, W.R. Dissolved Oxygen in the Chesapeake Bay. Workshop for Maryland Sea Grant College, December 9, 1991.

Boynton, W.R. Teasing-out large-scale relations among ecosystem process: An approach and example from the Chesapeake Bay region. Current Approaches for Modeling Estuarine Ecosystem Processes. Sponsored by the Chesapeake Bay Program, STAC and CRC. March 25, 1992.

Boynton, W.R. Remote Sensing in Chesapeake Bay: The CBOS Initiative. Maryland Saltwater Sportfishermen's Association. Solomons, MD. March 28, 1992.

Boynton, W.R. "Twilight Estuary" Video and discussion of ecosystem modeling. St. Mary's College, St. Mary's City, MD. March 30, 1992

Boynton, W.R. Case study of Data Synthesis/Risk Characterization and Management of the Chesapeake Bay and Patuxent River. Narragansett, RI. May 21, 1992.

Boynton, W.R. Nutrient budgets in the Chesapeake Bay. ESCA/ERF Conference. Plymouth, UK. September 15, 1992.

Boynton, W.R. *Watershed for the Chesapeake*. Panel discussion. Maryland Sea Grant College. Maryland Science Center, Inner Harbor, Baltimore, MD. October 8, 1992.

Boynton, W.R. Nutrient budgets in the Chesapeake Bay. University of Stockholm, Stockholm, Sweden. December 15, 1992.

Boynton, W.R. Conceptualization, construction and analysis of nutrient budgets of Chesapeake Bay: Scientific and managerial utility of ecosystem-scale budgets. OCCO Workshop.

- Quinta de Marim, Parque Natural da Ria Formosa, Portugal. May 4-7, 1993.
- Boynton, W.R. Presentation on the film "A Watershed for the Chesapeake" to REU students for the Maryland Sea Grant College. May 27, 1993.
- Boynton, W.R. Nutrient budgets of Chesapeake Bay and its tributary estuaries. Summer Colloquium speaker. Marine Environmental Sciences Consortium. Dauphin Island Sea Lab. Dauphin Island, AL. June 8, 1993.
- Boynton, W.R. Presentation at the Alliance for the Chesapeake Bay Conference--Rivers of the Chesapeake: An Action Agenda. September 13, 1993.
- Boynton, W.R. Site review. Perspectives on Ecosystem Research. Maryland Sea Grant College. September 29, 1993.
- Boynton, W.R. Environmental problem solving. University of Maryland Univeristy College. October 1993.
- Boynton, W.R. and W.M. Kemp. 1993. Relationships between forcings and ecosystem stocks and processes in Chesapeake Bay. ERF Conference, Hilton Head, SC. November, 1993.
- Hagy, J.D. and W.R. Boynton. Relationships between external forcings and ecosystem responses in Chesapeake Bay and a western shore tributary estuary. "Toward a Sustainable Coastal Watershed: The Chesapeake Experience." Portsmouth, VA. June 1-3, 1994.
- Boynton, W.R. The 1994 International Countryside Stewardship Exchange Closing Convention. Chesapeake Bay Region. Alliance for the Chesapeake Bay. Solomons, MD. September 23, 1994
- Boynton, W.R. Nutrient analysis for water quality, nutrient budget research, living resource research and information regarding submerged aquatic vegetation. The Chesapeake Bay Program. Nutrient subcommittee's fall technical exchange. Solomons, MD. September 27, 1994.
- Boynton, W.R. Renewable Natural Resources Foundation. Human Activities and Ecosystem Function: Reconciling Economics and Ecology. Estuarine Ecosystem--Issues of the Chesapeake Bay. Solomons, MD. October 13-16, 1994.
- Boynton, W.R. Synthesis of estuarine ecosystem data. Mid-Atlantic Regional Marine Research Program Land-use Workshop. Belmont Conference Center, Elkridge, MD. November 30 - December 2, 1994.

- Boynton, W.R. Nutrients and primary productivity in the Chesapeake Bay. SCOPE Workshop. Irvine, CA. February 22, 1995.
- Boynton, W.R. Response time of the Bay to nutrient load reductions. Chesapeake Bay Program Office. Annapolis, MD. March 9, 1995.
- Boynton, W.R. Trophic interactions in estuarine systems (TIES): Pulsed inputs, physical structures and biological patchiness. Chesapeake Bay Program Monitoring Subcommittee. US EPA, Chesapeake Bay Program Office. Annapolis, MD. March, 1995.
- Boynton, W.R. Implementation committee findings of the initial LMER project on the response time of the Bay to nutrient reduction efforts. US EPA. Chesapeake Bay Program. Annapolis, MD. March, 1995.
- Boynton, W.R. Nutrient budgets for coastal ecosystems. Summer Colloquium Program. Dauphin Island Sea Lab. University of South Alabama. July 11, 1995.
- Boynton, W.R. Shared Resources. Airsheds and Watersheds: The Role of Atmospheric Nitrogen Deposition. A Chesapeake Bay Program workshop. October 11 -12, 1995.
- Boynton, W.R. Chesapeake Bay Observing System and TIES Program. Annual Partnership Meeting. October 11, 1995.
- Boynton, W.R. Introduction to the NSF Chesapeake Bay LMER Program. Commonwealth Center for Coastal Physical Oceanography Seminar Series. Old Dominion University, Norfolk, VA. October 16, 1995.
- Boynton, W.R. Design and preliminary results from a new LMER program in Chesapeake Bay: Trophic Interactions in Estuarine Systems (TIES). 13th International Estuarine Research Federation, Corpus Christi, TX. November 14, 1995.
- Boynton, W.R. 1996. Ecology of coastal lagoons and estuaries--geology and sedimentology. OCCO Workshop. Lisbon, Portugal. January 24-27, 1996.
- Boynton, W.R. 1996. Summary of Chesapeake Bay LMER Project: Trophic Interactions in Estuarine Systems. Food Web Workshop. Marine Biological Laboratory, Woods Hole, MA. February 3-6, 1996.
- Boynton, W.R. 1996. Nutrient effects on the health of the Bay. (Session Title: The Restoration of the Chesapeake: A National Paradigm). AMSIE '96. AAAS Conference. Baltimore, MD. February 11, 1996.

- Boynton, W.R. 1996. Water quality problems of the Chesapeake. Chesapeake Bay Nutrient Reduction Goal Rationale. Context Meeting: The Problem and the Impacts. Council of Governments. Washington, D.C. March 4, 1996.
- Boynton, W.R. 1996. Nutrient impacts on Estuarine Systems: The Good, the Bad and the Ugly. Plenary talk. "Managing Nutrients to Prevent Pollution". Alliance for the Chesapeake Bay Conference. Solomons, MD. March 13, 1996.
- Boynton, W.R. 1996. National Environmental Monitoring and Research Framework. Mid-Atlantic Region Pilot Workshop. NOAA. University of Maryland Conference Center. April 10-12, 1996.
- Boynton, W.R. 1996. Maryland-Mexico Environmental Project. Chesapeake Bay Site Visit. "Nutrient budgets, environmental management, and coastal systems". Solomons, MD. April 29, 1996.
- Boynton, W.R. 1996. Water Quality and Living Resources Modeling Workshop. Chesapeake Bay Program. St. Michaels, MD. July 9 and 10, 1996.
- Boynton, W.R. 1996. "Recreational Values and the Bay". Economic Value of Chesapeake Bay Restoration. NOAA Coastal Ocean Program/EPA Chesapeake Bay Program Workshop. Belmont Center, Elkridge, MD. July 11, 1996.
- Boynton, W.R. 1996. A Modeling Subcommittee Quarterly Review. Chesapeake Bay Program Workshop. Annapolis, September 30 - October 2, 1996.
- Boynton, W.R. 1997. Nutrients and Living Resources: Making the Connection. Plenary speaker. Maryland's Tributary Teams First Annual Meeting. Sponsored by Maryland Department of Natural Resources. College Park, Md. January 11, 1997.
- Boynton, W.R. T. Malone, R. Brinsfield and P. Bergstrom. 1997. How do nutrients, SAV and DO relate? A panel discussion. Chesapeake Bay Foundation. Tilghman Island. February 20, 1997.
- Boynton, W.R. Chesapeake Bay SAV Restoration Workshop. National Wildlife Visitor Center. Laurel, MD. March 24 and 25, 1997.
- Boynton, W.R. Fifth Annual Living Resource and Ecosystem Modeling Workshop. Panel member. Chesapeake Bay Program Office. St. Michael=s, MD. July 8 and 9, 1997.
- Boynton, W.R. Presentation given at Asbury-Solomons Island Continuing Care Retirement Community. *Ecology of the Chesapeake Bay*. August, 1997.

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- Kemp, W.M. and W.R. Boynton. Plenary presentation at the Stockholm Water Symposium. Eutrophication, habitat dynamics and trophic feedbacks: Understanding and managing coastal ecosystems. August 1997.
- Boynton, W.R. Nutrients and the bay. Blue Ribbon Citizens *Pfiesteria* Commission. Citizens *Pfiesteria* Action Commission. September 24, 1997.
- Boynton, W.R. et al. Interactions between physics and biology in the estuarine turbidity maximum of Chesapeake Bay, USA. 1997 ICES Annual Science Conference. Baltimore, MD. September 25 - October 3, 1997.
- Boynton, W.R. Chesapeake Bay eutrophication: Current status, historical trends, nutrient limitation and management actions. AWWA: Coastal Nutrient Workshop. Sydney, Australia. October 30-31, 1997.
- Boynton, W.R. Future of Chesapeake Ports. Second Virginia-Maryland Natural Resources Colloquium. Mt. Airy Plantation, MD. 24 Mar. 2000.
- Boynton, W.R. From a diamond in the rough to a jewel of the Chesapeake: CBL's first 75 years. Public lecture series honoring CBL's 75th Anniversary. Chesapeake Biological Laboratory, Solomons, MD. 26 Apr. 2000.
- Fiscus, D.A., W.R. Boynton and R.H. Gardner. Spatial structure and predictive mapping of chlorophyll in a large estuarine system. Ecological Society of America. 2000.
- Boynton, W.R. Historic and recent patterns of nutrient inputs, effects on water quality, fate of nutrients, and likely responses to load reductions. Symposium on Nutrient Over-Enrichment of Coastal Waters: Global Patterns of Cause and Effect. National Academy of Sciences, Washington, DC. 11 Oct. 2000.
- Boynton, W.R. Nutrient Inputs and Ecosystem Processes in Chesapeake Bay. N2001 Conference, "Coastal Effects" Session. Bolger Center, Potomac, MD. 17 Oct. 2001.
- Boynton, W.R., J.D. Hagy, C. Keefe and K. Wood. Quantifying Water Quality Responses to increased Nutrient Loading by using a 50 year record of Nutrient Loading and Water Quality for Chesapeake Bay. Estuarine Research Federation Conference 2001: *An Estuarine Odyssey*. St. Pete Beach, Florida. 4-8 Nov. 2001.
- Hagy, J.D., W.R. Boynton, W.M. Kemp and R.E. Ulanowicz. Effects of Hypoxia on Food Web Structure and Efficiency during Summer in the mesohaline Chesapeake Bay: Assessment using Network Analysis. Estuarine Research Federation Conference 2001: *An Estuarine Odyssey*. St. Pete Beach, Florida. 4-8 Nov. 2001.
- Burger, N.H. and W.R. Boynton. Open Water Metabolism Measurements in Six Eutrophic Chesapeake Bay Tributaries. Estuarine Research Federation Conference 2001: *An Estuarine Odyssey*. St. Pete Beach, Florida. 4-8 Nov. 2001.
- Frank J., R. Stankelis, M. Lawrence, J. Hagy and W. Boynton. Rapid Water Quality Assessment of Chesapeake Bay Littoral Zone. Estuarine Research Federation Conference 2001: *An Estuarine*

Odyssey. St. Pete Beach, Florida. 4-8 Nov. 2001.

Michael, B.D., R.E. Magnien, E.L. Ebersole, T.A. Parham, L.P. Karrh, W.R. Boynton and N.H. Burger. Enhanced Estuarine Shallow Water Habitat Assessment. Estuarine Research Federation Conference 2001: *An Estuarine Odyssey*. St. Pete Beach, Florida. 4-8 Nov. 2001.

Tenore, K., F. Andrade, J. Blanton, W. Boynton, D. Carey, R. Diaz, F. Holland, E. Lopez-Jamar, P. Montagna, F. Nichols, R. Rosenberg, H. Queiroga, M. Sprung, J. Terwin and R. Whitlatch. The Navigator Project: Characterizing the Role Benthos Plays in large 'Coastal Seas'. I. A Modular Approach to Characterizing Habitats and Identifying Key Forcing Functions, Processes and Benthic Responses. Estuarine Research Federation Conference 2001: *An Estuarine Odyssey*. St. Pete Beach, Florida. 4-8 Nov. 2001.

Boynton, W.R. Baltic Sea Conference 2001. Invited Presentation on Chesapeake Bay. Stockholm, Sweden.

Boynton, W.R. et al. Quantifying Water Quality Responses to increased Nutrient Loading using a 50 year record of Nutrient Loading and Water Quality for Chesapeake Bay. Estuarine Research Federation Conference 2001: *An Estuarine Odyssey*. St. Pete Beach, FL. 4-8 Nov. 2001.

Boynton, W.R. 2002 Annual Tributary Team Meeting, A Commitment to Place: Celebrating Our Communities and Environment. Presentation: Session 1D: *Nutrients in the Bay - Current Status and Future Challenges*. 23 Feb. 2002.

Boynton, W.R. Hood College Coastal Ecology Semester, CBL Lecture. March 2002.

Boynton, W.R. Issues in Marine Policy. Old Dominion University, Course Lecture. Mar. 2002.

Fisher, T.R., W.R. Boynton and J.D. Hagy, III. Watershed Nutrient Inputs, Phytoplankton Accumulation and Carbon stocks in Chesapeake Bay. Invited lecture, winter AGU 2002. San Francisco, CA.

Boynton, W.R. Nutrient Inputs to Chesapeake Bay: Historical Patterns, Ecological Effects and Future Prospects. Smithsonian Environmental Research Center, Evening Lecture Series 2002. Nov. 2002.

Frank, J., C. Zimmerman and W.R. Boynton. Autolab: A High Frequency In-Situ Nutrient Analysis System to Enhance the Resolution of Water Monitoring. NASL, Chesapeake Biological Laboratory, University of Maryland. Nov. 2002.

Magnien, R.E., B.D. Michael, M. Trice, W.R. Boynton and R.M. Stankelis. A Spatially and Temporally Intensive Habitat Monitoring Network for Chesapeake Bay. American Society of Limnology and Oceanography. Feb. 2003.

Fisher, T.R., W.R. Boynton and J.D. Hagy III. The History of Cultural Eutrophication in the Choptank and Patuxent tributaries of Chesapeake Bay. American Society of Limnology and Oceanography. Feb. 2003.

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- Boynton, W.R. Nutrient Inputs to Large Estuarine Ecosystems: Historical Patterns, Ecological Effects and Future Prospects. Keynote Address: Sixth Annual Student Marine Biology Research Colloquium 2003, College of Charleston, Charleston, SC. 21-22 Feb. 2003.
- Boynton, W.R. Nutrient Inputs to Chesapeake Bay: Historical Patterns, Ecological Effects and Future Prospects. Manta Noon Series, Department of Natural Resources, Annapolis, MD. 6 Mar. 2003.
- Jordan, T.E., J.C. Cornwell and W.R. Boynton. Changes in Phosphorus Biogeochemistry Across the Transition from Freshwater to Saltwater. Jug Bay National Estuarine Research Reserve. 2 May 2003.
- Boynton, W.R. Nutrient Budgets for the Patuxent River Estuary. UMCES Science Forum: Integration and Application Network, Current Projects and Future Directions, University of Maryland Headquarters, Adelphi, MD. 6 May 2003.
- Boynton, W.R. Water quality results for Calvert County tidal waters. Environmental panel Presentation, Calvert Pines Senior Center, Prince Frederick, MD May 2003.
- Williams, M.R., T.R. Fisher, K. Eschleman, W.R. Boynton, R. Hood and D. Fiscus. An integrated modeling system for management of the Patuxent River basin in the Mid-Atlantic, USA. Antalya/Kemer, Turkey. 13-16 Aug. 2003.
- Bailey, E.M., J. Frank, F. Rohland, P. Smail, R. Stankelis and W.R. Boynton. Sediment Oxygen and Nutrient Exchanges across Strong Estuarine Gradients: A Comparison of Biogeochemical Processes from Multiple Chesapeake Bay Tributaries. 17th Biennial Conference of the Estuarine Research Federation: *Estuaries on the Edge*. Seattle, WA. 14-18 Sept. 2003.
- Jordan, T.E., J.C. Cornwell and W.R. Boynton. Changes in Phosphorus Biogeochemistry across the transition from Freshwater to Saltwater. 17th Biennial Conference of the Estuarine Research Federation: *Estuaries on the Edge*. Seattle, WA. 14-18 Sept. 2003.
- Kemp, W.M., M. Brooks and W.R. Boynton. Trophic Yield, Nutrient Enrichment and Environmental Variation in Chesapeake Bay. 17th Biennial Conference of the Estuarine Research Federation: *Estuaries on the Edge*. Seattle, WA. 14-18 Sept. 2003.
- Michael, B.D., R.E. Magnien, T.M. Trice, R.M. Stankelis, W.R. Boynton and S.D. Preston. Shallow Water Monitoring Design Utilizing New Technologies to Access Chesapeake Bay Water Quality Criteria. 17th Biennial Conference of the Estuarine Research Federation: *Estuaries on the Edge*. Seattle, WA. 14-18 Sept. 2003.
- Mikita, K.A., J. Barnes and W.R. Boynton. An Investigation of Factors Influencing the Dynamics of the Spring Phytoplankton Bloom in the Patuxent River Estuary, Maryland. 17th Biennial Conference of the Estuarine Research Federation: *Estuaries on the Edge*. Seattle, WA. 14-18 Sept. 2003.
- Stankelis, R.M., W.R. Boynton and J.M. Frank. An Analysis of Parameters Controlling

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- Epiphyte Biomass Accumulation Rates in Chesapeake Bay and its Tributaries. 17th Biennial Conference of the Estuarine Research Federation: *Estuaries on the Edge*. Seattle, WA. 14-18 Sept. 2003.
- Boynton, W.R. Eutrophication of Chesapeake Bay: Historical Origins, Ecological Impacts, and Probable Future Trends. The Curtis and Edith Munson Distinguished Lecture Series: The Science and Policy of Coastal Eutrophication and Restoration. Yale School of Forestry and Environmental Studies, New Haven, CT. 4 Nov. 2003.
- Boynton, W.R. Current Water Quality Conditions. Chesapeake Bay Commission, Annapolis, MD. Meeting held at Patuxent Naval Air Station. 13 - 14 Nov. 2003.
- Boynton, W.R. Multi-decade Record Nutrients in the Patuxent Estuary. VIMS. Nov. 2003.
- Boynton, W.R. et al. Overview of Nutrients in the Bay–Nutrients: Water and Air Quality. A Panel Discussion. Invited Speaker at Chesapeake Bay Foundation’s Annual Education Content Conference, Tilghman Island, MD, 24-27 Feb. 2004.
- Boynton, W.R. Nutrient History in the Patuxent River Estuary. Invited Faculty Seminar, Old Dominion University, March, 2004.
- Boynton, W.R. What Has Worked and Not Worked in Chesapeake Bay Management. Student Seminar Class, Old Dominion University. March, 2004.
- Boynton, W.R. Keynote speaker of AERS Spring 2004 meeting. Salisbury University. 26 Mar. 2004.
- Boynton, W.R. Sources, Sinks and Ecosystem Effects of Nutrients in the Patuxent River estuary: 15 Years of Human and Climate-induced Variability. Invited Seminar, Chesapeake Bay Seminar Series. 14 May 2004.
- Boynton, W.R. DO and Chlorophyll. Presented paper at Chesapeake Research Consortium’s Lag Time Workshop. Annapolis, MD, 19-20 May 2004.
- Boynton, W.R. Patuxent Perspective: Revisiting Restoration Efforts after a Quarter Century” A 25th Anniversary Legacy. Invited Speaker, 13 Jun. 2004.
- Jordan, T.E., J.C. Cornwell and W.R. Boynton. Changes in Phosphorus biogeochemistry across the transition from freshwater to Saltwater. Presented to American Society for Limnology & Oceanography, Savannah, GA, June 2004.
- Anderson, J.T., Boynton, W.R., Greene, S., Cornwell, J.C., Jordan, T.E. 2004. Spatial and temporal variability in Patuxent River sediment flux. Presented to American Society for Limnology & Oceanography, Savannah, GA. June 2004 (oral presentation).
- Boynton, W.R. Oxygen Dynamics in Chesapeake Bay Revisited: New Perspectives on Trends, Impacts and Indicators. Keynote Speaker. A Workshop sponsored by the Maryland Sea Grant College Program. Adelphi, MD. Aug. 2004.

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- Boynton, W.R. Eutrophication in Chesapeake Bay: History, Ecological Responses and Restoration. Invited talk, Distinguished Scientist Seminar Series, Marine Biological Laboratory. Woods Hole, MA Oct. 2004.
- Boynton, W.R. Nutrient Management in the Patuxent River Estuary: A Case Study. International Ecosystem Restoration Conference, Orlando, FL. Dec. 2004.
- Boynton, W.R. Nutrients in Chesapeake Bay: The Good, Bad and Ugly. CBL Docents Lecture, CBL. Apr. 2005.
- Boynton, W.R. Nutrient pollution in Chesapeake Bay. NSF-REU Program Lecture, CBL. Jun. 2005.
- Boynton, W.R. Nutrient patterns and processes in estuarine ecosystems. US E.P.A. Regional Lab, Narragansett, R.I. Oct. 2005.
- Boynton, W.R. Historical pattern and ecological interactions associated with eutrophication in Chesapeake Bay. SETAC, Baltimore, MD. Oct. 2005.
- Stankelis, R.M., H. Soulen, W.R. Boynton, P. Smail and E.M. Bailey. Estimates of open-water ecosystem metabolism across the salinity gradient of the Patuxent River estuary. 18th Biennial Conference of ERF, Norfolk, VA. Oct. 2005.
- Anderson, J.T., W.R. Boynton, T.E. Jordan and J.C. Cornwell. Phosphorus fluxes and transport in the middle Patuxent estuary, Maryland. 18th Biennial Conference of ERF, Norfolk, VA. Oct. 2005.
- Jordan, T.E., J.C. Cornwell, J.T. Anderson and W.R. Boynton. Do sea salts or sulfate mobilize iron-bound phosphate from estuarine sediments? 18th Biennial Conference of ERF, Norfolk, VA. Oct. 2005.
- Williams, M.R., T.R. Fisher, C.E. Cerco, W.R. Boynton, M.W. Kemp, K.N. Eshleman, R.R. Hood, S.C. Kim, S.E. Greene and G. Radcliffe. Effects of tidal marshes on the biogeochemistry of low-salinity estuarine regions: inferences from numerical modeling. 18th Biennial Conference of ERF, Norfolk, VA. Oct. 2005.
- Boynton, W.R., E.M. Bailey, J.C. Cornwell and M.S. Owens. Characteristics of sediment-water nutrient exchanges in hyper-eutrophic estuarine ecosystems. 18th Biennial Conference of ERF, Norfolk, VA. Oct. 2005.
- Kemp, W.M., J.M. Testa, E.M. Smith and W.R. Boynton. Organic carbon balance, pelagic-benthic interactions, and estuarine hypoxia: inferences from rate measurements and box models. 18th Biennial Conference of ERF, Norfolk, VA. Oct. 2005.
- Cornwell, J.C., M.S. Owens and W.R. Boynton. Refining the estimates of denitrification, N burial and P burial in Chesapeake Bay sediments. 18th Biennial Conference of ERF, Norfolk, VA. Oct. 2005.

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- Boynton, W.R. 2006. Status of water quality in Chesapeake Bay. Maryland Marine Trades Association Annual Meeting. Kent Island, MD.
- Boynton, W.R. 2006. Status of the Patuxent River Estuary. Patuxent River Appreciation Days Environmental Summit. Solomons, MD. Oct. 2006.
- Boynton, W.R., J.D. Hagy, J. Cornwell, M. Kemp, S. Greene and M. Owens. Nitrogen budgets for ecology and management: Patuxent River Estuary case study. 19th Biennial Conference of the Estuarine Research Federation: Science and Management: Observations / Syntheses / Management. November 4-8, 2007. Providence, RI, USA. Oral Presentation- Presenter.
- Bailey, E., W. Boynton and S. Moesel. FLUXZILLA: a comprehensive analysis of over 7000 sediment oxygen and nutrient exchanges in estuarine and coastal marine systems. 19th Biennial Conference of the Estuarine Research Federation: Science and Management: Observations / Syntheses / Management. November 4-8, 2007. Providence, RI, USA. Oral Presentation- Presenter.
- Drohan, A.F., Bailey, E.M., Boynton, W.R., Tanner, C.E., and Paul, R.W., 2007. Combining efforts to conduct shallow water quality monitoring in Maryland using high speed spatial mapping and continuous monitoring. 19th Biennial Conference of the Estuarine Research Federation: Science and Management: Observations / Syntheses / Management. November 4-8, 2007. Providence, RI, USA. Poster Presentation.
- Trice, T.; Michael, B.; Hall, M.; Trumbauer, C.; Cole, B.; Romano, W.; Boynton, W.; Moesel, S.; Bailey, E.; Tanner, C.; Bush, H.; Moore, K.; Anderson, B.; Neikirk, B.; Tango, P., Monitoring the Nation's River – High Frequency Water Quality Monitoring of the Potomac River, USA. 19th Biennial Conference of the Estuarine Research Federation: Science and Management: Observations / Syntheses / Management. November 4-8, 2007. Providence, RI, USA. Poster Presentation.
- Boynton, W. R. 2007. What did John Smith have for Dinner. An invited public lecture. John Smith 400th anniversary celebration. Calvert County, MD June 2007.
- Boynton, W.R. and Bailey, E.M., 2008. Oral presentation at the Metropolitan Washington Council of Governments Potomac Monitoring Forum, Better Monitoring for Better Water Resources Management, 10-11 March 2008, Cacapon Resort State Park, Berkeley Springs, West Virginia.
- Wainger, L.A., M.A.C. Ceballos, W.R. Boynton and E.M. Bailey. 2008. Understanding spatial variability of water quality to promote seagrass restoration success. Atlantic Estuarine Research Society Fall 2008 Meeting. November 6-8, 2008. Fairfax, VA. Poster Presentation.

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- Bailey, E.M., W.R. Boynton and K.V. Wood. 2008. Community metabolism along nutrient and salinity gradients of the Potomac River estuary: an application from continuous monitoring sites. Atlantic Estuarine Research Society Fall 2008 Meeting. November 6-8, 2008. Fairfax, VA. Poster Presentation-Presenter.
- Boynton, W.R., 2008. Nutrient Loading and River Responses in the Tidal Potomac. Oral presentation at the George Mason University Inaugural Seminar Series, 18 March 2008, Fairfax, Virginia.
- Wainger, L.A. and Boynton, W.R., 2008. Cost-Effective Spatial Data Interpolation. Oral presentation at the Chesapeake Modeling Symposium, 12-14 May 2008, Annapolis, Maryland.
- Boynton, W. R. 2008. Role of tidal marshes in the nutrient economy of the Patuxent River Estuary. Jug Bay Wetland Sanctuary Annual Meeting. 30 March, 2008 Ann Arundel Co., MD.
- Boynton, W. R. 2008. Nutrient hotspots in the landscape: The Patuxent River Case Study. NSF-LTER Baltimore Ecosystem Study Annual P.I. Meeting. 9 April, 2008.
- Boynton, W. R. 2008. Status of eutrophication in Chesapeake Bay. St. Marys College of Maryland. Class presentation/discussion. 18 April, 2008. St Marys City, MD.
- Boynton, W. R. 2008. Estuarine nutrient dynamics. Class lecture. McDaniel's College, Westminster, MD. 2 April, 2008.
- W. R. Boynton. 2008. Nutrient analysis techniques. Class lecture (J. Schijf class). 23 April 2008. CBL.
- Boynton, W. R. Nutrient Issues in Chesapeake Bay. Maryland Farm Association. CBL 22 September, 2008
- Boynton, W. R. 2008. Thresholds in estuarine ecosystems. MDE Annual Staff Conference. Quiet Waters Park, Annapolis, MD. 24 September, 2008.
- Boynton, W. R. 2008. Water Quality Issues in estuarine Ecosystems. Barnegat Bay National Estuary Program Annual Meeting. Barnegat Bay, NJ. 15 October, 2008.
- Boynton, W. R. 2008. The Continuing Saga of Patuxent River Restoration. Invited Seminar at HPL. 22 October, 2008. Cambridge, MD.
- Boynton, W. R. 2008. Water quality issues in Chesapeake Bay. Southern MD Leadership Workshop. Solomons, MD 23 October, 2008.

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- Boynton, W. R. 2008. Water Quality Issues in Estuarine Ecosystems. Maryland Water Quality Monitoring Council Annual Conference. December, 2008. Baltimore, MD.
- Boynton, W.R., L.A. Wainger and E.M. Bailey. 2009. Ecosystem Processes Component (EPC) Review. Oral presentation at the Potomac River Water Quality Monitoring Partnership Meeting, January 6, 2009, Colonial Beach, Virginia.
- Boynton, W. R. 2009. Bay Water Quality and History of the Patuxent Water Quality Issues. Invited seminar at Council of Governments (COG). Washington, DC 12 March, 2009
- Bailey, E.M., W.R. Boynton, R.M. Stankelis and B. Stuller. 2009. The Effects of Flow Regime on Submerged Aquatic Vegetation (SAV) Epiphyte Fouling Rates. Oral presentation at the Chesapeake Research Consortium's Ecosystem Based Management: The Chesapeake and Other Systems Conference, March 22-25, 2009, Baltimore, Maryland.
- Wainger, L.A., M.A.C. Ceballos, W.R. Boynton and E.M. Bailey. 2009. Ecosystem Processes Component (EPC) Review. Oral presentation at the Maryland Chesapeake Bay Monitoring Program Annual Principal Investigators Meeting, April 8, 2009, Baltimore, MD.
- Bailey, E.M., M.A.C. Ceballos, J.T Anderson and W.R. Boynton. 2009. YSI Blue-Green Algae (BGA) Sensors Spatial Water Quality Mapping of the Potomac River Estuary. Poster presentation at the Estuaries and Coasts in a Changing World: Coastal and Estuarine Research Federation 20th Biennial Conference, November 1-5, 2009, Portland, Oregon.
- Bailey, E.M., M.A.C. Ceballos, J.M. Grebmeier and W.R. Boynton. 2009. The Effects of Temperature and Carbon Addition on Arctic Sediment Oxygen and Nutrient Exchanges. Oral presentation at the Estuaries and Coasts in a Changing World: Coastal and Estuarine Research Federation 20th Biennial Conference, November 1-5, 2009, Portland, Oregon.
- Lee, Y.J., W. Boynton, Y. Li, and M. Li 2010. The Role of Wind and Other Factors in Controlling Summer Hypoxia, MAPOM Meeting, Hoboken, New Jersey.
- Lee, Y.J. and W. Boynton 2010. Factors Regulating Hypoxia in Coastal Water, Chesapeake Modeling Symposium 2010, Annapolis, Maryland.
- Boynton, W. R. and W. M. Kemp. Reflections on Chesapeake Bay collaborative research. Horn Point evening seminar series. 23 March, 2010. Easton, MD.
- Boynton, W. R. The Corsica River restoration saga. US EPA Chesapeake Bay Program Star

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- Group Talk. Annapolis, MD 25 March 2010.
- Boynton, W. R. Ecological thresholds in Chesapeake Bay. Sea Grant. Annapolis, MD. 6 April, 2010.
- Boynton, W. R. Nutrient obesity in Chesapeake Bay. Southern Maryland Power Squadron, Lexington Park, MD 8 April, 2010.
- Boynton, W. R. Corsica River restoration and analysis. Maryland Water Quality Monitoring Council. Washington College, 13 July, 2010.
- Boynton, W. R. Solomons Harbor monitoring project. Report to the Calvert County Board of County Commissioners. Prince Frederick, MD 25 May 2010.
- Boynton, W. R. The role of wetlands in the Patuxent River basin. US EPA Chesapeake Bay Program Star Group Talk. Annapolis, MD 29 July, 2010
- Boynton, W. R. Ecology and management in Chesapeake Bay. Ecological Society of America workshop for young scientists. Silver Springs, MD 4 November, 2010.
- Lee, Y.J., W. Boynton, M. Li, and Y. Li 2011. The Role of Spring Wind in Controlling Summer Hypoxia, NOAA CHRP Hypoxia Modeling Meeting, Cambridge, Maryland.
- Lee, Y.J., W. Boynton, M. Li, and Y. Li 2011. The Role of Spring Wind in Controlling Summer Hypoxia, NOAA CHRP Hypoxia Modeling Meeting, Cambridge, Maryland.
- Sperling, C.L., W.R. Boynton, D. Jasinski, E.M. Bailey, and M.C. Ceballos. 2011. Community metabolism in Chesapeake Bay: historical and contemporary measurements. Coastal and Estuarine Research Federation Biennial Conference. November 6-11. Daytona Beach, FL. Poster Presentation.
- Harris, L., C. Sperling, W. Boynton, M. Niesen, and K. Davis Ziombra. 2011. An exploration of metabolism in the Chesapeake Bay using the metabolic theory of ecology. Coastal and Estuarine Research Federation Biennial Conference. November 6-11. Daytona Beach, FL. Oral Presentation.
- Sperling, C.L., W.R. Boynton, D. Jasinski, E.M. Bailey, and M.C. Ceballos. 2011. Community metabolism in Chesapeake Bay: historical and contemporary measurements. Maryland Water Monitoring Council Annual Conference. December 1. Linthicum, MD. Poster Presentation.
- Boynton, W. R., J. M. Testa, W. M. Kemp and J. C. Cornwell. 2011. The Corsica River estuary needs a pollution diet: How much is enough? Coastal and Estuarine Research

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Federation Biennial Conference. November 6-11. Daytona Beach, FL. Invited Poster Presentation.

Boynton, W. R., Y. Lee, W. M. Kemp and M. Brooks. 2011. Case study of the Back River estuary: Strong management actions and ecosystem lag times. . Coastal and Estuarine Research Federation Biennial Conference. November 6-11. Daytona Beach, FL. Invited Oral Presentation.

Brady, D., J. testa, W. Kemp, W. Boynton and D. DiToro. 2011. Estimating organic matter deposition and decay with a long-term sediment flux database and a mechanistic model. Coastal and Estuarine Research Federation Biennial Conference. November 6-11. Daytona Beach, FL. Invited Oral Presentation.

Y. Lee and W. R. Boynton. 2011. The role of regional climate and other factors in controlling hypoxia. Coastal and Estuarine Research Federation Biennial Conference. November 6-11. Daytona Beach, FL. Oral Presentation.

Owens, M., J. Cornwell, W. Boynton, L. Harris and E. bailey. 2011. Denitrification in the tidal Potomac: controls by redox, salinity and by riverine nitrate inputs. Coastal and Estuarine Research Federation Biennial Conference. November 6-11. Daytona Beach, FL. Oral Presentation.

Cornwell, J.C., J. O'Keefe, M.S. Owens, T.E. Jordan, E.M. Bailey and W.R. Boynton. Sedimentary Phosphorus and Nitrogen Fluxes Change with Seasonal Increases in Estuarine Salinity. American Society of Limnology and Oceanography (ASLO) 2011 Aquatic Sciences Meeting. February 13-18, 2005. San Juan, Puerto Rico, USA. Oral Presentation (J.C. Cornwell-Presenter).

Bailey, E.M., W.R Boynton and M.R. Hall. 2011. How Low Can It Go? The Chesapeake Bay Shallow Water DO Limbo Stick. Poster presentation at the *Societies, Estuaries and Coasts: Adapting to Change*, Coastal and Estuarine Research Federation 21th Biennial Conference, November 6-10, 2011, Daytona Beach, FL, USA. Poster Presentation-*Presenter*.

Bailey, E.M., W.R Boynton and M.R. Hall. 2011. How Low Can It Go? The Chesapeake Bay Shallow Water DO Limbo Stick. Poster presentation at the Maryland Water Monitoring Council 17th Annual Conference, December 1, 2011. North Linthicum, Maryland, USA. Poster Presentation-*Presenter*.

Boynton, W. R. 2011. Roundtable discussion of Chesapeake Bay TMDL. Chesapeake Environmental Protection Association. SERC. Shadyside, MD Jan. 2011

Boynton, W. R. 2011. Restoration of the Corsica River: Lessons learned for the Parker Creek system. American Chestnut Land Trust Keynote Speaker Annual Meeting, Prince

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Frederick, MD 5 Feb. 2011.

Boynton, W. R. Meeting Synthesis : what did we learn here and how do all these pieces fit together? AERS meeting, Solomons, MD 9 April, 2011.

Boynton, W. R. Annual summary of Solomons Harbor monitoring results. Calvert County Board of County Commissioners. 19 April, 2011.

Boynton, W. R. Introduction to Chesapeake Bay ecology. NOAA-sponsored Phytoplankton Rocks program at Huntingtown High school, Huntingtown, MD 21 May, 2011.

Boynton, W. R. Introduction to Chesapeake Bay ecology. NSF-REU Program seminar. CBL. 10 June, 2011.

Boynton, W. R. Introduction to Chesapeake Bay ecology. Chesapeake Bay Foundation teachers workshop. CBL. 13 July, 2011.

Boynton, W. R. State of the Chesapeake Bay. South River Federation Annual Meeting. Mayo, MD 11 October, 2011.

Boynton, W. R. Success stories concerning Chesapeake Bay restoration. Joint TMAW-NTWG workshop. UMBS, USGS offices, Baltimore, MD 12 October, 2011.

Boynton, W. R. Envisioning the ecosystem present and future. Chesapeake Bay STAC Retreat. Herrington Harbor, 27 March, 2012.

Boynton, W. R. (with S. W. Nixon and J. Cloern). On the value of long-term monitoring of estuarine and coastal marine ecosystems. COMPASS presentation on Capitol Hill, Washington, DC May, 2012.

Boynton, W. R. Nutrient dynamics in riverine estuaries: Understanding, modeling and managing inputs. . New South Wales, Australia Office of Environment and Heritage, University of Technology, Sydney, Australia. May 2012.

Boynton, W. R. Success stories involving restoration in Chesapeake Bay. Tri-County Council of Southern Maryland. Hughesville, MD June, 2012.

Boynton, W. R. Chesapeake Bay emerging success stories. Maryland BayStat Briefing for MD Governor Martin O'Malley. Annapolis, MD July, 2012

Boynton, W. R. Nitrogen budgets for identification of nutrient removal “hotspots” at the Land-sea interface. Plenary Speaker CERF Conference in Mar del Plata, Argentina. Nov 2012.

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- Boynton, W. R. From Patuxent to Chesapeake Bay: reflections on a lifetime of measuring and understanding troubled ecosystems. Invited Public Lecture. Salisbury University, Salisbury, MD. November, 2012.
- Boynton, W. R. Annual summary of Solomons Harbor monitoring results. Calvert County Board of County Commissioners. April, 2013.
- Boynton, W. R. Master Naturalist Class. Estuarine Ecology. Prince Frederick, MD April, 2013
- Boynton, W. R. Chesapeake Bay Restoration. Graduate Class. Towson State University. May, 2013
- Boynton, W. R. CBL Docent Lecture Ecology of Chesapeake Bay. Solomons, MD May, 2013
- Boynton, W. R. South River Federation Annual Meeting. Restoration success stories in Chesapeake Bay. Edgewater, MD June, 2013
- Boynton, W. R. NSF-REU Program at CBL. Introduction to estuarine ecology. Solomons, MD June 2013
- Boynton, W. R. Chesapeake Bay Foundation Summer Teachers Program. Introduction to Chesapeake Bay Ecology. Solomons, MD July, 2013
- Boynton, W. R., C. L. S. Hodgkins, C. O'Leary, E. M. Bailey, A. R. Bayard and L. A. Wainger. Multi-decade responses of a tidal creek system to nutrient load reductions: Mattawoman Creek, MD USA. International Congress for Conservation Biology, Baltimore, MD July, 2013. (presentation by L. Wainger)
- Boynton, W. R. Chesapeake Bay Foundation program for the Metropolitan Science Writers Association. Chesapeake Bay success stories. Shadyside, MD September, 2013
- Boynton, W. R. Washington Suburban Sanitary Commission. Invited Staff Seminar. Water quality trends in the Patuxent River estuary. Laurel, MD September, 2013
- Lee, D. Y., Y. J. Lee and W. R. Boynton. Inter-annual variability of winter-spring phytoplankton in Chesapeake Bay from 1985-2010. Coastal and Estuarine Research Federation 22th Biennial Conference, November, 2013, San Diego, CA. USA.
- Hopkinson, C., J. Day, W. R. Boynton, M. Kemp, R. Lane and E. Roy. 2014. An approach to quantifying impacts of major disturbances on oysters at the ecosystem level. International Conference on Shellfish Restoration. Charleston, SC December, 2014.
- Boynton, W. R. 2014. Case studies within the Chesapeake Bay Ecosystem. US-EPA Chesapeake Bay Program STAR Trends Conference, Annapolis, MD March 2014.

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- Boynton, W. R. 2014. Water Quality Status of Chesapeake Bay. Chesapeake Bay Foundation Staff Training seminars. Tangiers Island, VA February, 2014.
- Boynton, W. R. 2014. On Synthesis in Estuarine Ecology. Keynote Presentation at the Spring 2014 AERS meeting. Ocean City, MD March 2014.
- Boynton, W. R. 2014. Nutrient History of Chesapeake Bay. Salisbury State University. April, 2014.
- Boynton, W. R. 2014. State of Estuarine Science: Opening Presentation. Open Source Community Modeling Conference. Annapolis, MD. May, 2014.
- Boynton, W. R. and J. Testa. 2014. State of Science on Nutrient Pollution. ACT/NOAA Nutrient Sensor Challenge. White House Conference Center, Washington, DC. September, 2014.
- Boynton, W. R. 2015. Impact of Phosphorus on water quality. The State of the Science of Phosphorus Conference. Sponsored by Chesapeake Bay Foundation and Maryland Grain Producers. Chesapeake Community College. January, 2015
- Boynton, W. R. and L. Harris. 2015. History of Patuxent River Ecology. 2015 Patuxent River Conference. Jefferson Patterson Park, Calvert County, MD June, 2015
- Boynton, W. R. 2015. Bay water Quality: What's going to happen? Chesapeake Bay Foundation Trustee Meeting, Annapolis, MD. June, 2015.
- Boynton, W. R. 2015. Impact of Nutrients on Chesapeake Bay and Signs of Resilience. The Nature Conservancy, Delmarva Conservation Partnership, Chesapeake Community College. July, 2015.
- Boynton, W. R. 2015. Introduction to Chesapeake Bay Ecology. Chesapeake Bay Foundation Summer Teachers Program. Solomons, MD July, 2015.
- Boynton, W. R. 2015. Nutrients: The good, the bad and the TMDL. Chesapeake Bay Commission. Alexandria, VA. September, 2015.
- Boynton, W. R. 2015. Chesapeake Bay Ecology and Habitat Issues. Leadership Maryland, Hebron, MD. September, 2015.
- Boynton, W. R. 2015. An Introduction: History of Chesapeake Bay and Watershed. Alliance for the Chesapeake Bay Watershed Forum. Shepardstown, WV. September, 2015.
- Boynton, W. R. 2015. Impact of Phosphorus and Nitrogen on Estuarine Water Quality. Crop Management School for MD, VA, WV and DE. Ocean City, MD. November, 2015.

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- Kemp, W. M., J. Testa and W. R. Boynton. 2015. Decadal-scale trends in nitrogen and related variables in a stratified estuary. Coastal and Estuarine Research Federation 23th Biennial Conference, November, 2015. Portland, OR. USA.
- Boynton, W. R., J. Testa, C. Hodgkins, M. Ceballos, E. Bailey and J. Humpfrey. 2015. Sediments tell the story of ecosystem restoration in the Back River estuary, MD. Coastal and Estuarine Research Federation 23th Biennial Conference, November, 2015. Portland, OR. USA.
- Hodgkins, C., L. Harris, W. R. Boynton, J. Testa and M. Day. 2015. A small estuarine system “on the edge”: watershed development vs water quality conditions. Poster. Coastal and Estuarine Research Federation 23th Biennial Conference, November, 2015. Portland, OR. USA.
- Harris, L., W. R. Boynton, J. Cornwell, M. Pennino, C. Hodgkins, C. Palinkas, M. Day, M. Owens and J. Testa. 2015. Changing nutrient budgets for an urban estuary. Coastal and Estuarine Research Federation 23th Biennial Conference, November, 2015. Portland, OR. USA.
- Lee, Y., D. Lee and W. R. Boynton. 2015. Winter-spring chlorophyll-a concentration and phytoplankton community composition in Chesapeake Bay. Poster. Coastal and Estuarine Research Federation 23th Biennial Conference, November, 2015. Portland, OR. USA.
- E. Symposia Organized/Chaired for Professional Meetings
- Boynton, W.R and E. Setzler-Hamilton. Sediment and erosion control in the Chesapeake Bay drainage basin. Solomons Forum. Solomons, MD. August, 1989.
- Boynton, W.R., W.M. Kemp, and R. Wetzel. Current approaches for modeling estuarine ecosystem processes. Workshop for the Chesapeake Bay Program, Scientific and Technical Advisory Committee. St. Michaels, MD. March 25, 1992
- Boynton, W.R. Hosted. Workshop on defining biological integrity of Chesapeake Bay and methods used for measurement. Sponsored by US EPA Environmental Research Laboratory, ERL-N and the Health and Ecological Criteria Division of the Office of Science and Technology. Chesapeake Biological Laboratory, Solomons, MD. October 20, 1992.
- Boynton, W.R and E. Setzler-Hamilton. Sediment and erosion control in the Chesapeake Bay drainage basin. Solomons Forum II. Solomons, MD. August, 1992.

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- Ribeiro, A. and W.R. Boynton. Ecology of coastal lagoons and estuaries--geology and sedimentology. Session IIIb. OCCO Workshop. Quinta de Marim, Parque Natural de Ria Formosa, Portugal. May 4-7, 1993.
- Boynton, W.R. *Trophic Interactions in Estuarine Systems*. Workshop Number 1. Chesapeake Biological Laboratory, Solomons, MD. February 15-16, 1995.
- Boynton, W.R. LMER All-Scientists Meeting. November 12 - 16, 1997. Solomons, MD.
- Trophic Interactions in Estuarine Systems. Workshop for PI's and FRA's. Workshop No.2. Rehoboth Beach, DE. 9-11 Mar. 1998.
- Trophic Interactions in Estuarine Systems. Workshop for PI's and FRA's. Workshop No. 3. Solomons, MD. 5-6 Apr. 1999.
- Trophic Interactions in Estuarine Systems. Workshop for PI's and FRA's. Workshop No. 4. Solomons, MD. 16-17 Nov. 2000.
- Kemp W.M. and W.R. Boynton. *Issues of Scale in Coastal Ecology*. Estuarine Research Federation, St. Pete Beach, FL. Nov. 2001.
- Boynton, W. R. *Understanding the Role of Macroalgae in Shallow Estuaries*. Organized workshop for Maritime Institute, Linthicum, MD. Jan. 2002.
- Kemp, W.M., W.R. Boynton, D. Breitburg and E. Goldman. 2007 Thresholds in Chesapeake Bay Restoration. Spring 2007. Sea Grant and Chesapeake Bay Program STAC.
- Alliance for Coastal Technology (NOAA). Nutrient Sensor Workshop (with Dr. Mario Tamburri and others). CBL. May 2007.
- Boynton, W.R., W. M. Kemp and D. Breitburg. 2009. Lessons from History: How Could Long-term Perspectives Inform the Chesapeake Bay's Response to Restoration Efforts? Session chair. Chesapeake Research Consortium's Ecosystem Based Management: The Chesapeake and Other Systems Conference. March, 2009. Baltimore, Maryland.
- Kemp, W. M., W. R. Boynton and D. Breitburg. 2009. Organized Special session at CERF Conference: restoration of eutrophic coastal ecosystems: Theories, Examples, and Synthesis. Estuaries and Coasts in a Changing World: Coastal and Estuarine Research Federation 20th Biennial Conference, November, 2009. Portland, Oregon.
- Kemp, W. M. and W. R. Boynton. Trends, patterns, and shifts in time-series of coastal ecological data: Invited Session, Session Co-Chairs. Coastal and Estuarine Research Federation Biennial Conference. November, 2011. Daytona Beach, FL.

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Boynton, W. R. (and others). Chesapeake Bay Program STAC workshop. Evaluation of Chesapeake Bay dissolved oxygen umbrella criteria concept. Annapolis, MD March, 2011.

Boynton, W. R. (with CBP and TMAW staff). Developed and presented a series of workshops concerning Chesapeake Bay water quality criteria assessment. March, April and December, 2013. Annapolis and Baltimore, MD

Kemp, W. M., W. R. Boynton, J. Testa and D. Brady. Synthesis Research in Estuarine and Coastal Science: Focus on process and application. SCI-039. Coastal and Estuarine Research Federation 22th Biennial Conference, November, 2013, San Diego, CA. USA.

F. Active Memberships in Professional Societies:

Atlantic Estuarine Research Society
Coastal and Estuarine Research Federation
American Society of Limnology and Oceanography
AAAS

G. Other Professional Recognition:

1. Editorships: None

2. Awards

1982 Awarded certificate of appreciation by Tri-County Council of Southern Maryland (Presented by Maryland Governor Harry Hughes)

1984 SCOR Invited Workshop. Ecological Theory in Relation to Biological Oceanography. Quebec, Canada. March 16-24, 1984.

1990 Nominated for the PEW Scholars in Conservation and the Environment Fellowship.

1992 Nominated for Computerworld Smithsonian Awards for Environment, Energy and Agriculture.

1996 Appointed Treasurer, Coastal and Estuarine Research Federation (1996-2002)

1997 Nominated for the PEW Scholars in Conservation and the Environment Fellowship.

1999 The UMCES President's Award for Excellence in Application of Science.

2003 Distinguished Service Award, Estuarine Research Federation.

2009 Received Odum Award for Lifetime Achievement (with W. M. Kemp) from the Coastal and Estuarine Research Federation (CERF)

2009 President-Elect of the Coastal and Estuarine Research Federation (2009-2011)

2011 President - Coastal and Estuarine Research Federation (2011-2013)

2013 Past President - Coastal and Estuarine Research Federation (2013-2015)

2015 Distinguished Service Award, Coastal and Estuarine Research Federation.

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2015 Admiral of the Chesapeake Bay Award for work towards understanding and restoring Chesapeake Bay. Presented by Maryland Gov Martin O’Malley, January 2015

3. Peer Review Activities

- a. Proposals Reviewed
Many during past 40 years including proposals to NSF, Sea Grant, NOAA, EPA, Calfed and others
- b. Articles Reviewed
Many during past 40 years including articles submitted to Limnology and Oceanography, Estuaries and Coasts, Marine Ecology Progress Series, Estuarine, Coastal and Shelf Science, Biogeochemistry and others

H. Consulting Activities

Swedish EPA. Review of the National Monitoring Program 1992.
 Sea Grant Lagoon Mesocosm Review. Narragansett, RI 1992.
 Rhode Island Sea Grant College Program. Technical Review Panel. Narragansett, RI 1995
 Tampa Bay Estuary Program Review, Tampa, FL, 2004 and 2007
 Australian EPA Water Quality Monitoring Workshop, Sydney, Australia 1996 and 2012
 San Francisco Bay water monitoring development workshop, San Francisco, CA 2010
 Consultant for American Rivers concerning possible removal of the Patapsco River, MD
 Blodie Dam. January – June, 2014
 US Department of Justice, Deep Water Horizon Impacts, Washington, DC and Baton Rouge, LA 2013-2014

IV. **Teaching and Training**

A. University of Maryland Courses

Course No.	Title	Institution	Credit Hrs.	Date	Co-Instructors
ENCE 688	Systems Ecol. of Estuaries	College Park	2	1981	D’Elia, Ulanowicz , Boynton
MEES 611	Systems Ecol. of Estuaries	College Park	2	1985	Kemp and Boynton
MEES 698	Nutrient Dynamics / Energetics	CBL	1	1982	Boynton and others
MEES 508	Nutrient and Carbon Dynamics	CBL	1	1986	Boynton and Others

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MEES 621	Estuarine Ecology	College Park	2	1989	Boynton (invited lectures)
ZOOL 708	Ecosystem Ecology	College Park	1	1990	Boynton (invited lectures)
MEES 608	Coastal and Watershed Ecology	CBL	1	1990	Boynton (invited lectures)
MEES 608V	History of Biol Oceanography	CBL	1	1992	Boynton and Others
MEES 608V	Seminar in Ecology	CBL	2	1996	Boynton (3 lectures)
SEARCH	History and Ecology Chesapeake Bay.		1	1997	Boynton and others

Ecology of the Chesapeake Bay. A residential workshop for community college and undergraduate science faculty. Sponsored by NSF, Prince George's Community College and Chesapeake Research Consortium, Inc. June, 1991.

MEES 608V	Seminar in Ecology	CBL	1	1999	Miller, Mihursky, Tenore, Ulanowicz, Boynton
MEES 608V	Seminar in Ecology	CBL	1	2001	Miller, Mihursky, Tenore, Ulanowicz, Boynton
MEES 698I	Land Margin Interactions	IVN Based	4	2001	Fisher, Currie, Boynton
MEES 608S	Seminar in Ecology	CBL	1	2002	Boynton and Staff
MEES 698I	Land Margin Interactions	IVN Based	4	2002	Fisher, Currie, Boynton
MEES 608S	Seminar in Ecology	CBL	1	2003	Boynton and Staff
MEES 698I	Land Margin Interactions	IVN Based	4	2003	Fisher, Castro, Boynton
MEES 698I	Land Margin Interactions	CBL IVN Based	4	2004	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL IVN Based	4	2005	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL IVN Based	4	2006	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL IVN Based	4	2007	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL IVN Based	4	2008	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL IVN Based	4	2009	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL IVN Based	4	2010	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL IVN Based	4	2011	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL IVN Based	4	2012	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL IVN Based	4	2013	Fisher, Castro, Boynton
MEES 608k	Synthesis Seminar	CBL/HPL IVN Based	1	2014	Kemp and Boynton

B. Graduate Students Supervised as Major Advisor

1. Degrees Completed

Boynton, John Ph. D. MEES, U. of Md. 1985

The influence of current velocity on nutrient and oxygen exchanges between estuarine sediments and the water column.

Walter R. Boynton

- Koenig, Patricia M.S. MEES, U. of Md. 1988
*Effects of a surface deposit feeding bivalve, *Macoma balthica*, on the magnitude of nutrient fluxes, oxygen consumption and nitrification rates in intact sediment cores.*
- Cowan, Jean-Louise W. M.S. U. of South Alabama 1995
Sediment-water nutrient and oxygen fluxes in Mobile Bay: A study of seasonal and interannual forcings and functions.
- Sweeney, Brendan M.S. MEES, U. of Md. 1995
Community metabolism in the Patuxent River estuary: 1963 to 1969 and present.
- Hagy, James M.S. MEES, U. of Md. 1996
Residence times and net ecosystem processes in Patuxent River estuary.
- Jasinski, David M.S. MEES, U. Of Md. 1996
Phosphorus dynamics in the mesohaline region of Chesapeake Bay.
- Hagy III, James D. Ph.D. MEES, U. of MD 2002
Eutrophication, hypoxia and trophic transfer efficiency in Chesapeake Bay.
- Mikita, Kimberly M.S. MEES, U. of MD. 2002
An investigation of factors influencing the dynamics of the spring phytoplankton bloom in the Patuxent River Estuary, Maryland.
- Cristi Korbeck Reid M.S. MEES, U of MD 2003
The effect of submerged aquatic vegetation as habitat on the survivorship of Mya arenaria in the Chesapeake Bay.
- Sarah Greene M.S. MEES, U. of MD 2005
Tidal freshwater and oligohaline tidal marshes as nutrient sinks in the Patuxent River estuary, Maryland.
- Sarah Kolesar Ph.D., MEES, U. of MD 2006
*The effects of low dissolved oxygen on predation interactions between *Mnemiopsis leidyi* ctenophores and larval fish in the Chesapeake Bay ecosystem (Co-chair with Dr. D. Breitburg).*

2. Graduate Students Committee Memberships:

John Brawley	Ph. D.	MEES, UMD
Laura Cornwell	Ph. D.	MEES, UMD
Sara Gottlieb	Ph. D.	MEES, UMD
Ben Haskell	M.S.	MEES, UMD
Sarah Kolesar	M.S.	MEES, UMD
Michael Mageau	Ph. D.	MEES, UMD

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Erik Smith	M.S.	MEES, UMD
Jill Stevenson	M.S.	MEES, UMD
Lisa Wainger	Ph. D.	MEES, UMD
John Woodwell	Ph. D.	MEES, UMD
Michael Liddel	M.S.	MEES, UMD
Andrew Chang	Ph.D.	MEES, UMD
Jeremy Testa	M.S.	MEES, UMD
Michael Doherty	Ph. D.	MEES, UMD
Janet Nye	Ph. D.	MEES, UMD
George Waldbusser	Ph.D.	MEES, UMD
Angela Hengst	M.S.	MEES, UMD
David Gillett	Ph.D.	Wm & Mary, VIMS
Jen O'Keefe	M.S.	MEES, UMD
Yonghui Gao	Ph.D.	MEES, UMD
Jennifer Bosch	Ph.D.	MEES, UMD
Carlos Lozano	M.S.	MEES, UMD
Lori Staver	Ph.D.	MEES, UMD
Tammy Newcomer	Ph.D.	MEES, UMD
Jennifer Bosch	Ph.D.	MEES, UMD
Lori Staver	Ph.D.	MEES, UMD
Meghann Neisen	MS	MEES, UMD
Jessica Foley	MS	MEES, UMD
Richard Friesner	Ph.D.	George Mason University
Britt Dean	MS	Wm & Mary VIMS

Supervised Sue Cassidy, a Martin Marietta Graduate Fellow, summer, 1993 and through school year 1993-1994.

Supervised Timothy Altaner, a Martin Marietta Graduate Fellow, summer, 1995.

V. Outreach and Service

A. Popular Articles

Boynton, W.R. 1970. Chincoteague Bay Oyster Industry. Commercial Fisheries News 3(5). Fish and Wildlife Administration of Maryland, Annapolis, MD

Dunnington, E.A. and W.R. Boynton. 1976. Impacts of pollutants from upstream on fish and shellfish resources of the Potomac River. Congressional Record, Hearings and Markup. Serial No. 94-20:405-428.

Wiley, M.L., T.S.Y. Koo, J.A. Mihursky, W.R. Boynton and E.M. Setzler. 1978. Maryland striped bass, Morone saxatilis - Biology and Life History. Ref. No. UMCEES 78-11

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CBL.

- Boynton, W.R., W.M. Kemp and J.C. Stevenson. 1979. Decline in aquatic vegetation studied by University of Maryland. *Commercial Fisheries News* 12(3):1-2. Maryland Department of Natural Resources, Annapolis, MD.
- Boynton, W.R. 1980. The Life in the River. p. 41-42 **In:** A.F. Shisman (ed.) *Calvert County Life*, Vol. I(5): Prince Frederick, MD.
- Younger, F., M.J. Reber, and W.R. Boynton. 1981. Academic Programs, *Bulletin for the Chesapeake Biological Laboratory*.
- Boynton, W.R., W.M. Kemp and J.C. Stevenson. 1982. Decline of submerged aquatic vegetation in Chesapeake Bay. *Coastal Ocean Pollution Assessment News* Vol. 2(2):15-17.
- Flemer, D.A., H.M. Austin, R.B. Biggs, W.R. Boynton, L.E. Cronin and T.C. Malone. 1984. How should research and monitoring be integrated. *Ches. Res. Consortium, UMCEES TS-10-84. CRC Publ. No. 113. pp. 102-125.*
- Boynton, W.R. 1987. Monitoring for management actions. *Chesapeake Bay Water Quality Monitoring Program--1st Biennial Report*. Published by Maryland Department of Health and Mental Hygiene, OEP, Baltimore, MD.
- Boynton, W.R. 1989. *CEES and Chesapeake Bay monitoring*, Chesapeake Bay Society.
- Boynton, W.R. 1989. Ecosystem studies section for CEES Annual Report.
- Boynton, W.R. 1990. Monitoring activities in Chesapeake Bay: past, present, and future. *CEES Annual Report*.
- Kemp, W.M. and Boynton, W.R. 1990. Chesapeake Bay: Processes of recycling, organic transformation and exchange between uplands and the Sea (PROTEUS). *National Science Foundation Newsletter. LTER Network News No. 8:8+*
- Boynton, W.R. 1991. Lab Notes: Remote sensing buoy: Taking the Bay's pulse. *Southern Maryland Times*. 1(4): 19-20.
- Boynton, W.R. 1992. Sediment and erosion control in the Chesapeake Bay drainage basin. *Solomons Forum II. White Paper*.
- Boynton, W.R. 1992. CEES receives major gift from AT&T for permanent Bay monitoring system. *Milestones*. UM Foundation publication. Spring 1992. p. 1-2.
- Article for *Milestones*. UM Foundation publication. Spring 1992.

Walter R. Boynton

Fisher, T.R., P.A. Sampou and W.R. Boynton. 1993. Nitrogen and Phosphorus loadings. CEES Annual Report.

Boynton, W.R. 1996. How it all TIES together. 1996 CEES Report. (An interview conducted by Dr. Wayne Bell.) p. 10-12.

Leffler, M. and J. Greer. 1996. At the heart of Plenitude: The Bay's complex circulatory system. *Maryland Marine Notes* 14(1): 1-5. (A description of the TIES grant research with remarks by Walter R. Boynton).

Bohlen, C., C. Stokes, D. Goshorn, and W.R. Boynton. (Eds.). Maryland Coastal Bays Program. 1997. *Today's Treasures for Tomorrow: An Environmental Report on Maryland's Coastal Bays*. Maryland Department of Natural Resources. MCBP 97-01. Annapolis, MD.

Boynton, W.R., et al. 1997. *The Cambridge Consensus: Forum on Land-Based Pollution and Toxic Dinoflagellates in Chesapeake Bay*. UMCES. Cambridge, MD

Boynton, W. R. 2003. *Howard Thomas Odum (1924 - 2002)*. Estuarine Research Federation Newsletter Vol. 28, No. 4, Winter 2002/2003.

Boynton, W.R., P. Smail and B. Stankelis. 2003. *A Data Point at Every Dock*. Solomons Sketches 6(1):1-2.

B. Public Service

1. Federal/State/Local Service (chronological order)

Executive Secretary (Supplemental Committee). Coastal Zone Management Program, Maryland Department of Natural Resources, Annapolis, MD. October 1976-March 1977.

Annual Host for National Audubon Society Expeditionary Institute. Involved multiple-day visit with lectures at the Chesapeake Biological Laboratory. Fall 1978-1984.

Member, Patuxent River Technical Advisory Group. Required interpreting scientific issues to a resource management audience. 1978-1984.

Testimony to Committee on the District of Columbia, Subcommittee on the Bicentennial, the Environment and the International Community. Factors Affecting Fisheries in the Potomac River (with E.A. Dunnington and J.A. Mihursky) October 1977.

Walter R. Boynton

Creation Around the Chesapeake. A Conference on Culture and Community in the Chesapeake Bay region. Invited speaker. June, 1980 and 1982. St. Mary's City, MD.

Ecological Problems of the Patuxent River. Scientific/Management presentation to State Secretaries of Planning, Natural Resources and Health and Mental Hygiene, Patuxent Park, MD. July 1981.

Featured participant in Maryland Sea Grant Film "The Twilight Estuary", 1981.

EPA - Chesapeake Bay Program. Integration of scientific results emanating from large-scale research in the Chesapeake Bay. Donaldson-Brown Conference Center (March and October 1981) and Wallops Island, VA (May 1981).

Tri-County Library Association. Proposal Development to National Endowment for the Humanities. Funded in July 1982.

Review of biological effects of reduced freshwater inflow to the Chesapeake Bay. Biota Evaluation Panel. U.S. Department of Interior, Fish and Wildlife Service. January-July 1982.

Coordinated MD Office of Environmental Protection Pilot Study Program. June, 1984.

CBL Host for National Geographic Society film of Chesapeake Bay, September, 1984.

Advise Director Anne Arundel Community College on development of laboratory at Jug Bay Park, Fall 1984.

Speaker, Rotary Club of St. Mary's County, December 1984.

In service for Chesapeake Bay Foundation and Nature Conservancy, Hog Island, VA. March, 1988).

Patuxent River Wade-In. Jefferson Patterson Park. Calvert County. June, 1988-2015

Member. Calvert County, Maryland, Environmental Commission by appointment of Calvert County Board of County Commissioners. Member and Vice-Chair 1985-1989.

Recording Secretary, Battle Creek Cypress Swamp Advisory Board, Calvert County. By appointment Calvert County Board of County Commissioners and Nature Conservancy.

Member, Ches-Pax Committee for Environmental Education. By appointment, Calvert County Board of County Commissioners (1988-1989) and Calvert County Board of Education (1990-1995).

Walter R. Boynton

Member, Scientific and Technical Advisory Committee (STAC), Reassessment Work Group.
EPA-Chesapeake Bay Program.

Reviewer for National Geographic Society, 1989

Participated in Public Television Series "*Innovations*", 1989.

Provided scientific explanations of bay ecology to Senator Charles Mathias' Chesapeake Bay
Inspection cruise. 1989

Provided scientific explanations of Patuxent River ecology to Maryland Senator C. Bernard
Fowler's fact-finding cruise. 1989

Briefing at CBL for U. S. Maryland Senator B. Mikulski, April 1989

Round Table discussion of Chesapeake Bay Issues. Sponsored by the Chesapeake Bay
Foundation. Calvert Co. Marine Museum. December, 1989.

Science Advisory Board, Maryland Department of Natural Resources, Chesapeake Bay
Research and Monitoring Division, 1989.

Briefing for MD US Senator Paul Sarbanes, December, 1989

National Estuarine Research Reserve Technical Advisory Committee (Chesapeake Bay).

Participant in National Geographic Society TV Documentary *A Chesapeake Borne*. 1990.

Discussion leader for Calvert County Public Library series "Let's Talk About It" Topic:
Beautiful Swimmers. March 27, 1991.

Speaker. Maryland-DC Chapter. Association of Physical Plant Administrators of Universities
and Colleges. "How's the Bay doing--Problems and success stories." June, 1991

Member, search committee for Smithsonian Environmental Research Center for position of
Quantitative Ecologist. September 1991.

Presentation to the Patuxent River Commission. October 1991.

Featured participant in University of Maryland Sea Grant Film *A Watershed for the
Chesapeake*. 1992.

Participant. Calvert County Department of Planning and Zoning's commission to draft
recommendations to guide future County planning. February, 1992.

Walter R. Boynton

Review Committee for establishing a National Facility for Experimental Marine Ecosystems Research within the new University of Rhode Island Coastal Institute on Narragansett Bay. January, 1992.

Member. Task Force to Review Chesapeake Bay Model. Patuxent River Commission. September, 1993.

Member. NSF Land Margin Ecosystem Research Coordinating Committee. 1994-1997.

Member. Jefferson Patterson Park and Museum's Technical Planning Committee. May, 1994.

Speaker. Chesapeake Bay Commission. Meeting held at CBL May, 1995.

Speaker. Southern MD Career Connections Partnership. 2nd Annual Meeting. June , 1996.

Member. NSF Workshop: Long-Term Ecosystem Research Planning. Madison, WI. July 1996.

Coalition to Restore Coastal Louisiana. January, 2000, Woodland Plantation, LA

Alternate member, member and Vice-Chair. Calvert County Zoning Appeals Board. 1996-2009.

NSF Plum Island LTER Site Review Oct. 2001

Patuxent River Commission, Presentation on status of Patuxent River estuary Oct. 2001

Reviewer for the Heinz Center's report *The State of the Nation's Ecosystems*. Nov. 2001.

ACES Scientific Advisory Committee Member. Review panel member for proposal reviews. University of South Alabama. March 2002.

Annual Tributary Team Meeting, A Commitment to Place: Celebrating Our Communities and Environment. Presentation: Session 1D: Nutrients in the Bay - Current Status and Future Challenges. Feb., 2002.

Hood College Coastal Ecology Semester, CBL Public Lecture. Solomons, MD 21 Mar. 2002.

Maryland Public Television. Outdoors Maryland, Interview with Robin Lloyd. Oct. 2002.

Maryland Governor's Oil spill prevention advisory committee. 2002

Chesapeake Bay Program, Living Resources Subcommittee. 2002

Chesapeake Bay Program, Modeling Expert Panel. 2002

Walter R. Boynton

Reviewer of Presidential Panel on Ocean Exploration for NOAA. *Discovering Earth's Final Frontier: A U.S. Strategy for Ocean Exploration*. (<http://oceanpanel.nos.noaa.gov/>) Jan. 2002.

Ocean.US Workshop for Integrated and Sustained Ocean Observations. Airlie Conference Center, Arlington, VA. Mar. 2002.

Reviewer of *Water Quality Criteria for the Bay*. Chesapeake Research Consortium, Inc., Edgewater, MD. 23 May 2002.

Attendee at National Eutrophication Update Workshop. Patuxent Wildlife Refuge Conference Center. Sept. 2002.

Chesapeake Futures: Choices for the 21st Century, An independent Report by the Scientific and Technical Advisory Committee (STAC), Chesapeake Research Consortium, Inc. Future Estuarine Conditions Task Force, 2003.

NSF-LTER Virginia Coastal Reserve Site Review, Aug. 2003.

Patuxent River Commission, member, by appointment of Maryland State Senate 2003 -2010

ACES Scientific Advisory Committee Member. Proposal review panel member. University of South Alabama, 2002-2007.

EPA Office of Water Panel Discussion on Water Quality/Monitoring Issues. Chesapeake Biological Laboratory, Jun. 2003.

Chesapeake 2000: Integrating The Chesapeake Bay Agreement into the Classroom. Lecture to Teachers. Chesapeake Biological Laboratory, Jul. 2003.

Solomon's Harbor: Environmental Panel Presentation at Calvert Marine Museum, May 2003.

NSF Scientific Task Force Advisory Panel concerned with redesign of NSF-LTER Program. 2004-2007

Hosted Coastal Bays Nutrient Budget Workshop, Annapolis, MD, Nov. 2004.

House of Delegates testimony on SB 320 Education, Health and Environmental Affairs Committee, Mar. 2004.

Member, Maryland Coastal Bays, STAC, 2004-2016

Senate testimony on SB 320 Education, Health and Environmental Affairs Committee, Mar. 2004.

Panel Reviewer (for research proposals) for U.S. Agency for International Development Bureau CDR and MERC Programs, Washington D.C., Oct. 2004.

Walter R. Boynton

EPA National Office, Member, Estuarine Nutrient Criteria Workgroup. June 2005 – 2008

EPA National Office, Member, Estuarine Nutrient Criteria Workgroup. 2005-2010

EPA Science Advisory Board, Hypoxia Panel. 2006-2008

Governor Martin O'Malley's transition team, Member. 2006-2007

Patuxent River Congressional Staffer cruise (with CBL director and staff), Oct. 2007.

Interview and Chesapeake Bay cruise with Baltimore Sun paper, Jun. 2008.

National Public Radio (Radio Times aired Live from Philadelphia) with Tom Horton, Jul. 2009.

National Public Radio, Morning Edition with Chris Joyce, Nov. 2009.

Participated in video production for NSF COSEE program, Jun. 2010.

Maryland Chesapeake Bay Trust, Science Advisory Board 2008-2015.

Patuxent Riverkeeper, Executive Board; Nov 2007 to 2015

Maryland Chesapeake Bay Trust, Science Advisory Board. 2008-2016

Member of Chesapeake Bay Program MRAT process, Apr. – Dec. 2009.

Chesapeake Bay Program TMAW Technical Workgroup Chair, Annapolis, MD. 2010 – 2014

Hosted State Treasurer Nancy Kopp on RV Rachel Carson cruise, Jun. 2010.

Meet with Congressman Steny Hoyer's staff concerning Bay restoration issues. Morgan State University Lab, Jul. 2010.

EPA Science Advisory Board, Florida Nutrient Criteria Assessment Panel, November, 2010 – February 2011

San Francisco Bay Estuary Program. Provided seminars on estuarine monitoring and participated in regional planning workshop. Oakland CA. June, 2011.

Research on Chesapeake Bay. Participated in video for American Chemical Society. Solomons, MD. 21 November, 2011

The Nature Conservancy, DC and Maryland Chapter, Board Member, 2011-present

Walter R. Boynton

Calvert County Master Naturalist Program. Aquatic Ecosystem Component. Prince Frederick, MD April, 2012-2015

Nutrients in Chesapeake Bay. Educational video production arranged by UMCES. Solomons, MD May 2013

Public school teacher workshop. Tom Wisner Legacy Program. Calvert County Marine Museum, Solomons, MD January, 2013

Capitol Hill Oceans Week (CHOW). Assisted CERF in planning and presenting Capitol Hill briefing on Human Health in the Coastal Zone coupled with Capitol Hill House and Senate Office visits. May, 2013.

CBL Docent Lecture. 2014. Nutrients...why all the concern? CBL April, 2014.

CBL Outreach Program 6th – 9th graders. Nutrients and Chesapeake Bay. Solomons, MD July, 2014.

NSF-REU Program. Chesapeake Bay Ecology. Solomons, MD June 2014.

Maryland Department of Natural Resources Mattawoman Creek Planning Workshop. Hosted event at CBL June, 2014.

Chesapeake Bay Foundation Summer Teacher Program. Overview of Chesapeake Bay Health. Solomons, MD July, 2014

Alliance for the Chesapeake Bay, Senior Advisor. 2014-2015. Annapolis, MD

Chesapeake Bay Trust Governor's Science Advisory Panel, Annapolis, MD October, 2014-2015

Maryland Sea Grant and Calvert Marine Museum Senator Bernie Fowler Oral History Project, Prince Frederick, MD October, 2014

Regional Sea Grant Coastal Bays User Workshop, Ocean City, MD March, 2014 (directed by L. Harris).

Annual review of Calvert County tidal water quality. Calvert County Board of County Commissioners. Prince Frederick, MD April, 1986-2014.

Provided testimony for Chesapeake Bay Commission to Maryland Senate and House of Delegates concerning phosphorus issues in Chesapeake Bay (P-Management tool). February, 2015

C. University System of Maryland

Walter R. Boynton

Participated in University of Maryland film "Maryland in Motion", 1987.

Member. University of Maryland Library Information Management System Council. May 1991.

University of Maryland Policy Program: presentation to the executive board. May 1989.

Member, Environmental Leadership Forum. University of Maryland System. Coastal and Environmental Policy Program. May and June, 1991.

Served of the REU Fellowship Committee for University of Maryland Sea Grant College. March 1993 - April, 1993.

Boynton, W.R. 1996. Nutrient effects on the health of the Bay. (Session Title: The Restoration of the Chesapeake: A National Paradigm). AMSIE '96. AAAS Conference. Baltimore, MD. February, 1996. Session organized by the University of Maryland.

Interview Chesapeake Quarterly (magazine), University Maryland Sea Grant College, "*Our Changing Vision of the Chesapeake.*" Jun. 2002.

D. UMCES/CBL

Annual speaker for Chesapeake Biological Laboratory participation in Patuxent River Appreciation Days, 1979-1982.

CBL Tenure Review Committees 1983-2015

UMCES Research Vessel Cruise and discussions with Governor W.D. Schaefer. June 1988.

Participated in Presidents Club outing at CBL, June 1989

Represented CBL at first mediated workshop (sediment run-off to Bay) as part of the policy center activities (November 1988; April and May 1989).

Search Committee, chairman (Ecosystem Ecologist), 1989

Media Day presentation. UMCES. May 1989.

Participated in development of Sea Grant movie, June 1989.

Participated in development of PBS movie, June 1989.

Walter R. Boynton

Participated in CEPP Aquaculture briefing for Southern Maryland delegation, Oct. 1989.

Briefing for CBL board of visitors, November 1989

Participated in CEPP Non-tidal wetlands briefing for Southern Maryland delegation, Nov. 1989.

Participated in Forum on Environmental Impacts of Land Use Policy, Wye Woods, Feb. 1990.

CEES Graduate Student Colloquium. Progress on a remote sensing buoy system. Sept. 1990.

Report on ecosystem program for the CBL/HPPEL Board of Visitors. Sept. 1990.

Participated in Form on Environmental Impacts of Land Use Policy. Nov. 1990.

Participated in Fall '90 SEARCH Public Seminar series. "Nutrient Overloading". Dec. 1990.

Speaker. CBL Board of Visitors. Remote sensing buoy system. January 1991.

Member. Strategic Faculty Development Plan for AL. 1991.

Member. Committee to receive gift to CEES from AT&T for CBOS. October 9, 1991.

Presentation to US Congressman Steny H. Hoyer at CBL, December 1991.

Developed draft 5 year plan for CBL Research Initiatives 1991-1992.

Speaker. President's Club Family Day and CBL Open House. July 1991.

Organized and co-hosted the Solomons Forum on Sediment Control. CBL. October 1991.

Briefing for CBL Board of Visitors, January 17, 1991. Remote sensing buoy system.

Demonstrated capabilities of Rover Buoy to CBL Board of Visitors. March 1992.

CEES Curriculum Track Committee, March 1992.

Presentation for University College Alumni Association Family Day held at CBL. June 1992.

Developed, with CBL librarian and CBL library committee, the planning document for the Library and Information Center at CBL, 1993-1994.

CBL Board of Visitors presentation on update of CBOS. February 1993.

Walter R. Boynton

Presentation of UMCEES program to US Senator (Md.) Barbara Mikulski. Dec. 1993.

Hosted display UMCEES Research Vessels at the CBL PRAD exhibit on October 1994.

Co-Chaired AL Faculty Search Committee (3 positions). January-March 1994.

Member of committee to evaluate appointment of Dr. L. Eugene Cronin as professor Emeritus.

Participant in CBL PRAD exhibit October, 1995.

Presentation of UMCEES program to Sun Belt Caucus' Staff Members. September 1994.

Participant in discussions with former Maryland Governor, Harry Hughes, newly appointed member to the University of Maryland Board of Regents, October, 1995.

Presentation on Nutrient Memory of the Chesapeake Bay for the Senate Economic and Environmental Affairs Committee at CBL on October 23, 1995.

Tour of Chesapeake Biological Laboratory and briefing for the Maryland Senate Economic and Environmental Affairs Committee. October, 1995.

Site review presentation for EPA-MEERC. Horn Point Environmental Laboratory, December 4, 1995.

Participant in cruise with Governor Harry Hughes to mid-Bay Chesapeake Bay Observing System (CBOS) buoy. September, 1996.

Participation in Patuxent River Appreciation Days October, 1996.

Chair, CBL Library Committee, 1996-1997.

CBL Small Boat Committee, 2000-Present

Chair, Selection Committee for the Truitt Environmental Award.

Savor The Bay: Winter 200 Science and Seafood Seminar Series, Popular Lecture. The Maryland Way Restaurant. 27 Mar. 2002.

J.A. Mirhursky Retirement Party Chair. July 2002.

Frank, J., C. Zimmerman and W.R. Boynton. *Autolab: A High Frequency In-Situ Nutrient Analysis System to Enhance the Resolution of Water Monitoring*. NASL, Chesapeake Biological Laboratory, University of Maryland. 20 Nov. 2002.

Walter R. Boynton

Interview Chesapeake Quarterly (magazine), Maryland Seagrass College, "*Our Changing Vision of the Chesapeake.*" Jack Greer. 4 Jun. 2002.

Chesapeake Bay Ecology. REU Fellowship 2003 Program, University of Maryland Sea Grant College. CBL Student Orientation, May 2003.

CBL Analytical Services Group Faculty Supervisor, 2000-2009

CBL Director Search Committee, 2004-2005

Interview with National Geographic concerning CBL and the Patuxent River, Oct. 2004.

UMCES Faculty Senate Member, 2005-2008

UMCES Research Vessel Design Committee, 2005-2008

CBL Faculty Search Committees, 2005-Present

Hosted and organized retirement party for Prof R. E. Ulanowicz, 2009

CBL Fall Seminar Series Chair, 2010

Organized "The Knot Class" for CBL students and staff - Feb 2012 and April 2013

Assisted with CBL "Run for Research" event. September, 2015.

Hosted EPA Trainers workshop at CBL. March, 2015.

E. International

Joint USA-UNAM (Mexico) Ecological Study of Terminos Lagoon, Campeche, Mexico. February 1981; February 1984; January 1985. Supported by NSF - International Programs.

Team Member. Swedish National Environmental Monitoring Program; International Review Team. December 1993.

Navigator Project. Understanding role of benthos in coastal seas. Portuguese Luso-American Development Foundation and National Science Foundation. Lisbon, Portugal, March and December, 2000

Walter R. Boynton