

## ***CURRICULUM VITAE*** calendar year 2013

### **Walter R. Boynton**

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#### **I. Education**

1969 B. S. Springfield College (Biology)

1974 M. S. University of North Carolina at Chapel Hill (Marine Sciences)

1975 Ph.D. University of Florida (Environmental Engineering)

#### **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.

1987 (Apr - Oct) Sabbatical at ASKO Laboratory, University of Stockholm

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.

1992-present Graduate Faculty, University System of Maryland.

1998-present Graduate Faculty, University of Maryland System Inter-Institutional Graduate Council.

#### **Awards and Special Recognition**

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

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

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

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

1999 The CES 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 at HPL) from the Coastal and Estuarine Research Federation

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

2012 President - Coastal and Estuarine Research Federation (2011-2013)

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

### III. Research

#### A. Areas of professional expertise

*Estuarine Ecology*: nutrient cycling; benthic processes; water quality studies.

*Seagrass Ecology*: distribution and growth; trophic processes; restoration.

*Ecosystem Modeling and Analysis*: estuary-land interactions; materials budgets; synthesis studies.

*Environmental Education*: graduate, undergraduate, general public.

#### B. Peer-Reviewed Publications

##### 1. Papers in Refereed Journals (last 5 years)

Breitburg, D.L., J.K. Craig, R.S. Fulford, K.A. Rose, W.R. Boynton, D. Brady, B.J. Ciotti, R.J. Diaz, K.D. Friedland, J.D. Hagy III, D.R. Hart, A.H. Hines, E.D. Houde, S.E. Kolesar, S.W. Nixon, J.A. Rice, D.H. Secor and T.E. Targett. 2009. Nutrient enrichment and fisheries exploitation: Interactive effects on estuarine living resources and their management. *Hydrobiologia* 629:31-47.

Lookingbill, T, S. S. Kaushal, R. H. Gardner, R. P. Morgan, A. J. Elmore, R. H. Hildrbrand, K. N. Eshleman, W. R. Boynton, M. A. Palmer and W. C. Dennison. 2009. Altered ecological flows blur boundaries in urbanizing watersheds. *Ecology and Society* 14(2):10

Wazniak, C.E.; Hall, M.R.; Bailey, E.M.; Boward, D.M.; Boynton, W.R.; Bratton, J.F.; Carruthers, T.J.B.; Chalmers, R.J.; Cole, L.W.; Cornwell, J.C.; Fertig, B.M.; Glibert, P.M.; Jones, A.B.; Jordan, T.E.; McCoy, J.; McGinty, M.; Shedlock, R.J.; Sherwell, J.; Sturgis, R.B.; Thomas, J.E.; Trice, T.M.; Wells, D.V. 2009. Water Quality Responses to Nutrients. In W. C. Dennison, J. E. Thomas, C. J. Cain, T. J. B. Carruthers, M. R. Hall, R. V. Jesien, et al. (Eds.), *Shifting Sands: Environmental and cultural change in Maryland's Coastal Bays* (pp. 249–292). Cambridge, MD: IAN Press.

Boesch, D. F., W. R. Boynton, L. B. Crowder, R. J. Diaz, R. W. Howarth, L. D. Mee, S. W. Nixon, N. N. Rabalias, R. Rosenberg, R. G. Sanders, D. Scavia, and R. E. Turner. 2009. *Eos* 90(4): 117-118.

Dale, V. H., C. L. Kline, J. L. Meyer, J. Sanders, H. Stallworth, T. Armitage, D. Wangsness, T. Bianchi, A. Blumberg, W. Boynton, D. J. Conley, W. Crumpton, M. David, D. Gilbert, R. W. Howarth, R. Lowrance, K. Mankin, J. Opaluch, H. Paerl, K. Reckhow, A. N. Sharpley, T. W. Simpson, C. S. Snyder, and D. Wright. 2010. Hypoxia in the Northern Gulf of Mexico. Springer Series on Environmental Management. ISSN 0172-6161. New York. 284pp.

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. [UMCES Cont. No. 4689]

Boynton, W. R. and S. W. Nixon. 2012. Budget Analyses of Estuarine Ecosystems, Chapter 17, pp 443-464; In: John Day et al (eds). *Estuarine Ecology* Wiley-Blackwell, NJ 550p. [UMCES Cont. No. XXXX requested]

Kimmel, D. G., W. R. Boynton and M. R. Roman. 2012. Long-term decline in the calanoid copepod *Acartia tonsa* in central Chesapeake Bay, USA: an indirect effect of eutrophication? *Est. Cstl. Shelf Sci.* 101: 76-85. [UMCES Cont. No. 4663]

Brady, D. C., J. M. Testa, D. M. Di Toro, W. R. Boynton and W. M. Kemp. 2012. Sediment flux modeling: calibration and application for coastal systems. *Est. Cstl. Shelf Sci.* Vol. 117: 107-124.

Lee, Y. J., W. R. Boynton, M. Li and Y. Li. 2013. Role of late winter-spring wind influencing summer hypoxia in Chesapeake Bay. *Estuaries and Coasts* Vol 36(4): 683-696. [UMCES Cont. No. 4726]

Testa, J. M., D. C. Brady, D. M. DiToro, W. R. Boynton, J. C. Cornwell, and W. M. Kemp. 2013. Sediment flux modeling: simulating nitrogen, phosphorus, and silica cycles. *Est. Cstl. Shelf Sci.* Vol. 131: 245-263. [UMCES Cont. No. XXXX requested]

Boynton, W. R., C. L. S. Hodgkins, C. A. O'Leary, E. M. Bailey, A. R. Bayard, and L. A. Wainger. 2013. Multi-decade responses of a tidal creek system to nutrient load reductions: Mattawoman Creek, Maryland USA. *Estuaries and Coasts* DOI 10.1007/s12237-013-9690-4. [UMCES Cont. No. XXXX requested]

## 2. Technical Reports (last 5 years)

Boynton, W.R., J.M. Testa and W.M. Kemp. 2009. An Ecological Assessment of the Corsica River Estuary and Watershed Scientific Advice for Future Water Quality Management: Final Report to Maryland Department of Natural Resources. Ref. No. [UMCES]CBL 09-117. [UMCES Technical Series No. TS-587-09-CBL].

Bailey, E.M., W.R. Boynton, R.J. Karrh, L.A. Wainger and M.A.C. Ceballos. 2009. Maryland Chesapeake Bay water quality monitoring program. Ecosystem processes component (EPC). Quality Assurance Project Plan for Water Quality Monitoring in Chesapeake Bay for FY2010. July 2009 – June 2010. Final Report to MD DNR. Ref. No. [UMCES]CBL 09-041. [UMCES Technical Series No. TS-581-09-CBL].

Boynton, W.R., L.A. Wainger, E.M. Bailey and M.A.C. Ceballos. 2009. Ecosystem Processes Component (EPC). Maryland Chesapeake Bay Water Quality Monitoring Program, Level 1 report No. 26. Jul. 1984 – Dec. 2008. Ref. No. [UMCES] CBL 09-082. [UMCES Technical Series No. TS-583-09-CBL].

Barnes, J. and W.R. Boynton. 2009. 2008 Water quality monitoring program for the Mill Creek sub-estuarine system located in southern Calvert County, Maryland. Final report prepared for the Calvert County Board of County Commissioners. Ref. No. [UMCES] CBL 09-019. [UMCES Technical Report Series No. TS-578-09-CBL].

Boynton, W.R., L.A. Wainger, E.M. Bailey, A.F. Drohan and A.R. Bayard. 2010. Ecosystem Processes Component (EPC). Maryland Chesapeake Bay Water Quality Monitoring Program, Level 1 report No. 27. Jul. 1984 -- Dec. 2009. Ref. No. [UMCES] CBL 10-098. [UMCES Technical Series No. TS-606-10-CBL].

Glibert, P. M. C. J. Madden, W. R. Boynton, D. A. Flemer, C. Heil and J. Sharp. 2010. Nutrients in Estuaries: a summary report of the National estuarine experts workgroup (2005-2007). US EPA, Washington, DC. Contract numbers 68-C-02-091 and EP-C-07-025. 188 pp.

Bailey, E.M., W.R. Boynton, R.J. Karrh, L.A. Wainger and M.A.C. Ceballos. 2010. Maryland Chesapeake Bay water quality monitoring program. Ecosystem processes component (EPC). Quality Assurance Project Plan for Water Quality Monitoring in Chesapeake Bay for FY2011. July 2010 -- June 2011. Final Report to MD DNR. Ref. No. [UMCES]CBL 10-029.

Bailey, E.M. and W.R. Boynton. 2010. Monitoring of Sediment Oxygen and Nutrient Exchange Measurements in Eastern Bay, Tangier Sound and Tributaries in Support of TMDL Development 2009. Data Report to Maryland Department of the Environment Technical and Regulatory Services Administration. Ref. No.[UMCES]CBL 10-043.

Barnes, J. and W.R. Boynton. 2010. 2009 Water quality monitoring program for the Mill Creek sub-estuarine system located in southern Calvert County, Maryland. Final report prepared for the Calvert County Board of County Commissioners. Ref. No. [UMCES] CBL 10-XXX. [UMCES Technical Report Series No. TS-XXX-10-CBL].

Bailey, E.M., W.R. Boynton, and R.J. Karrh. 2011. Maryland Chesapeake Bay water quality monitoring program. Ecosystem processes component (EPC). Quality Assurance Project Plan for Water Quality Monitoring in Chesapeake Bay for FY2012. July 2011 – June 2012. Final Report to MD DNR. Ref. No. [UMCES] CBL 10-201. Bailey, E.M., W.R. Boynton, and R.J. Karrh. 2011. Maryland Chesapeake Bay water quality monitoring program. Ecosystem processes component (EPC). Quality Assurance Project Plan for Water Quality Monitoring in Chesapeake Bay for FY2012. July 2011 – June 2012. Final Report to MD DNR. Ref. No. [UMCES] CBL 10-201.

Bailey, E.M., W.R. Boynton, M.A.C. Ceballos and K.K. Politano. 2011. Monitoring of Sediment Oxygen and Nutrient Exchange Measurements in Eastern Bay, Tangier Sound and Tributaries in Support of TMDL Development 2009. Final Report to Maryland Department of the Environment Technical and Regulatory Services Administration. Ref. No.[UMCES]CBL 11-004. [UMCES Technical Series No. TS-610-11-CBL].

Boynton, W.R., E. Bailey, C. Sperling, J. Barnes, N. Kaumeyer, J Frank, and C. Murray. 2011. 2010 Water Quality Monitoring Program for the Mill Creek Sub-Estuarine System and Patuxent Creeks Located in Calvert County, Maryland. Ref. No. [UMCES] CBL 11-013 A [UMCES Technical Report Series No. TS-615-11].

Boynton, W.R., L.A. Wainger, E.M. Bailey, A.R. Bayard, C.L. Sperling, M.A.C. Ceballos. 2011. Ecosystem Processes Component (EPC). Maryland Chesapeake Bay Water Quality Monitoring Program, Level 1 report No. 28. Jul. 1984 – Dec. 2010. Ref. No. [UMCES] CBL 11-024. [UMCES Technical Series No. TS-620-11-CBL].

Meyer, J. L. et al (Boynton a co-author). 2011. Review of EPA’s draft approaches for deriving numeric nutrient criteria for Florida’s estuaries, coastal waters, and southern inland flowing waters. EPA Science Advisory Board Report, i-40 <http://www.epa.gov.sab>.

Boynton, W.R., C.L.S. Hodgkins, J. Barnes, N. Kaumeyer, J. Frank, M.A.C. Ceballos. 2012. 2011 Water Quality Monitoring Program for Tidal Creeks in Calvert County, Maryland. Ref. No. [UMCES] CBL 12-006A [UMCES Technical Report Series No. TS-635-12].

Boynton, W.R., L.A. Wainger, E.M. Bailey, A.R. Bayard, C.L. S. Hodgkins, and M.A.C. Ceballos. 2012. Ecosystem Processes Component (EPC). Maryland Chesapeake Bay Water Quality Monitoring Program,

Level 1 report No. 29. Jul. 1984 – Dec. 2011. Ref. No. [UMCES] CBL 12-020. [UMCES Technical Series No. TS-637-12-CBL].

Boynton, W. R. 2012. An overview of nutrient dynamics in riverine estuaries, pp. 3-9: In Nutrient dynamics in riverine estuaries: understanding, modeling and managing inputs. New South Wales, Australia Office of Environment and Heritage, University of Technology, Sydney, Australia. p.46.

Hodgkins, C. L. S., W. R. Boynton, N. Kaumeyer, M.A.C. Ceballos, and J. M. Barnes. 2013. 2012 Water Quality Monitoring Program for Tidal Creeks in Calvert County, Maryland. Ref. No. [UMCES] CBL 2013-022 [UMCES Technical Report Series No. TS-648-13].

Boynton, W.R., L.A. Wainger, E.M. C. O’Leary, C.L. S. Hodgkins, A.R. Bayard, and M.A.C. Ceballos. 2013. Ecosystem Processes Component (EPC). Maryland Chesapeake Bay Water Quality Monitoring Program, Level 1 Report No. 30. Jul. 1984 – Dec. 2012. Ref. No. [UMCES] CBL 13-055. [UMCES Technical Series No. TS-655-13-CBL].

C. Contracts and Grants (past 5 years)

1. Awarded

FY09 Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes Component. MD DNR. Jul. 2008 – Jun. 2009. \$155,663

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. 2007 - Jul. 2009. \$12,000.

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. 2008 - Jun 2010. \$12,000.

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. 2009 - Jun 2010. \$12,000.

Ecofore 08: Modeling Ecological Responses to Climate and Nutrients. NOAA, Ecological Forecasting Program. 2006- 2010 \$2.28 million total; W.M. Kemp, Lead P.I., (Co-P.I. 5-yr program; Boynton total \$44,679/yr).

Ecofore 09: Modeling Ecological Responses to Climate and Nutrients. NOAA, Ecological Forecasting Program. 2006- 2010 \$2.28 million total; W.M. Kemp, Lead P.I., (Co-P.I. 5-yr program; Boynton total \$52,029/yr).

Monitoring of sediment oxygen and nutrient exchanges measurements in Eastern Bay, Tangier Sound and tributaries in support of TMDL development Phase I (\$96,497) and II (\$62,428). October 2008-December 2009.

FY10 Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes Component. MD DNR. (with L. Wainger) Jul. 2009 – Jun. 2010. \$110,000.

Forecasting responses of Delmarva Lagoons to changing landuse and climate (L. Harris PI; W. R. Boynton co-PI). NOAA-Sea Grant (time donated) Feb 09 – Dec 11.

Response of Chesapeake Bay Ecosystems to Changes in Nutrient Loading. EPA – Sea Grant. W. M. Kemp PI; W. R. Boynton co-PI. \$13,261. Sep 2009 – Dec 2010.

Ecofore 10: Modeling Ecological Responses to Climate and Nutrients. NOAA, Ecological Forecasting Program. 2006- 2010 \$2.28 million total; W.M. Kemp, Lead P.I., (Co-P.I. 5-yr program; Boynton total \$52,029/yr).

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

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

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.

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 2008 - Jun 2010. \$13,556.

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.

Ecofore 10: 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 during 2011).

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

Determining shallow water susceptibility to nutrient and sediment loads. MD-DNR. L. Wainger PI; W. Boynton co-PI (time donated) \$41,165 Aug 2011 – May 2012.

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

CHRP07: Modeling hypoxia and ecological responses to climate and nutrients. NOAA, Ecological Forecasting Program. 2006-2012 W.M. Kemp, Lead P.I., (Co-P.I. 5-yr program; Boynton total \$49,984 during final years; 2011-2013).

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.

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

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 (no-cost extension requested through 2014).

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

FY14 Maryland Chesapeake Bay Water Quality Monitoring Program Ecosystems Processes Component. MD DNR. (with L. Wainger) Jul 2013 – Jun 2014. \$125,000.

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.

## 2. Submitted

Currently negotiating with:

- 1) MD-DNR for FY 15 Biomonitoring funds (with L. Harris and J. Testa);
- 2) Calvert County Board of County Commissioners for continued monitoring of Calvert County tidal creek systems;
- 3) We (Kemp and Boynton) were successful in our second submittal for NSF Opus Program funding to begin mid-February, 2014.

## D. Invited Seminars and Presentations (last 5 years)

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 20<sup>th</sup> 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 20<sup>th</sup> 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
- 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.
- 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 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.

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 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 17<sup>th</sup> 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 25 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 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 Capital 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.

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 22<sup>th</sup> Biennial Conference, November, 2013, San Diego, CA. USA.

E. Symposia Organized/Chaired for Professional Meetings

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 22-25, 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 20<sup>th</sup> Biennial Conference*, November 1-5, 2009, Portland, Oregon.

Boynton, W. R. 2010 - 2011. Chair of the CBP Tidal Monitoring and Assessment Workgroup (TMAW). Annapolis, MD

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 6-11, 2011. Daytona Beach, FL.

Boynton, W. R. (and others). Chesapeake Bay Program STAC workshop. Evaluation of Chesapeake Bay dissolved oxygen umbrella criteria concept. Annapolis, MD Mar 16-17, 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 22<sup>th</sup> Biennial Conference, November, 2013, San Diego, CA. USA.

F. Active Memberships in Professional Societies

Atlantic Estuarine Research Society (AERS)  
 Coastal and Estuarine Research Federation (CERF)  
 American Society of Limnology & Oceanography (ASLO)

**IV. Teaching and Training**

A. University System of Maryland Courses Taught

Course No.	Title	Institution	Semester	Enrollment	Credit Hrs.	Co-Instructors
MEES 608V	Seminar in Ecology	CBL	Spring'99	10	1	Miller, Mihursky, Tenore, Ulanowicz
MEES 608V	Seminar in Ecology	CBL	2001			Miller, Mihursky, Tenore, Ulanowicz
MEES 698I	Land Margin Interactions	CBL	2001	10	4	Fisher, Currie, Boynton
MEES 608S	Seminar in Ecology	CBL	2002	5	1	Boynton and Staff
MEES 698I	Land Margin Interactions	CBL	2002	10	4	Fisher, Currie, Boynton
MEES 608S	Seminar in Ecology	CBL	2003	9	1	Boynton and Staff
MEES 698I	Land Margin Interactions	CBL	2003	10	4	Fisher, Castro, Boynton
MEES 698I	Land Margin Interactions	CBL	2004	7	4	Fisher, Castro, Boynton
MEES 612	Land Margin Interactions	CBL	2005	13	4	Fisher, Castro, Boynton
MEES 610	Land margin Interactions	CBL	2006	11	4	Fisher, Castro, Boynton
MEES 610	Land margin Interactions	CBL	2007	15	4	Fisher, Castro, Boynton
MEES 610	Land margin Interactions	CBL	2008	11	4	Fisher, Castro, Boynton
MEES 610	Land margin Interactions	CBL	2009	14	4	Fisher, Castro, Boynton
Guest Lecturer in Mitchelmore Class.....		CBL.....	2009.....			Mitchelmore
MEES 610	Land margin Interactions	CBL	2010	10	4	Fisher, Castro, Boynton
Guest Lecturer in Mitchelmore Class.....		CBL.....	2010.....			Mitchelmore

MEES 610	Land margin Interactions	CBL	2011	14	4	Fisher, Castro, Boynton
MEES 610	Land-Margin Interactions	CBL	2012	7	4	Fisher, Castro, Boynton
MEES 610	Land-Margin Interactions	CBL	2013	12	4	Fisher, Castro, Boynton
Guest Lecturer in Mitchelmore Class.....		CBL.....	2013.....			Mitchelmore

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.*
- 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 III, James D.                                      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 of 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 as Chairperson).*

2. Students Currently Supervised

None

3. Current Graduate Student Committee Memberships

Tammy Newcomer	Ph.D.	MEES	CBL
Jennifer Bosch	Ph.D.	MEES	HPL
Lori Staver	Ph.D.	MEES	HPL
Jessica Foley	MS	MEES	CBL
Richard Friesner	Ph.D.	GMU	GMU
Britt Dean	MS	VIMS	VIMS

4. Research Internships Supervised

None

**V. Outreach and Service**

A. Editorships: None

B. Public Service

Member and Vice-Chair, Calvert County Board of Zoning Appeals, 1997 - 2010.

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

Member, Maryland Coastal Bays, STAC, 2004-Present.

Patuxent Riverkeeper, Executive Board; Nov 2007 to present

Patuxent River Appreciation Days River Summit: State of the River Oct 2007-2010

Interview and cruise with Baltimore Sun paper on Chesapeake Bay, 11 June, 2008

Live Radio show National Public Radio (Radio Times aired from Philadelphia) with Tom Horton, July 2009

National Public Radio: Morning Edition with Chris Joyce. November 2009

Participated in video production for NSF COSEE program June 2010

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

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

Patuxent River Wade-In. Jefferson Patterson Park. Calvert County. June, 2013

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

C. Federal/State/Local Government

Patuxent River Commission, Member, Aug. 2003 - 2011.

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

EPA Science Advisory Board, Hypoxia Panel, Sept 2006 – Jan 08

Maryland Chesapeake Bay Trust, Science Advisory Board 2008-2011.

Member of Chesapeake Bay Program MRAT process Apr – Dec 2009

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

Meet with Congressman Steny Hoyer's staff concerning Bay restoration issues. Morgan State University Lab July, 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. 28-30 June, 2011.

Consultant for U. S. Dept of Justice concerning Deepwater Horizon oil spill in the Gulf of Mexico. September – December, 2013

D. International

E. University System of Maryland

None

F. UMCES and Laboratory

Nutrient Analytical Services Group Chair: 2000 - 2009

CES Faculty Senate, Member, 2005 to 2008

CBL Small Boat Committee

UMCES Research Vessel Design Committee, 2005 - 2008

Tenure Review committee for faculty at CES and other institutions, 1989-Present.

CBL Faculty Search Committees, 2005 – Present

Chair of CBL fall 2010 seminar series

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

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

G. Other Professional Service

Treasurer for Estuarine Research Federation (ERF) 1997 - 2003.

President-elect, President and past-President Coastal and Estuarine Research Federation 2009-2015

Chesapeake Bay Program TMAW chair June 2010 - present