Richard A. Johnstone

Present Employment

VMES, LLC 912 Baylor Drive Newark, Delaware 19711-3128 Cell: 302-299-5919 vmesllc@gmail.com www.vegmgmt.com.

Education

West Virginia University Morgantown, West Virginia BS, Forest Resources Management, 1976 IVM Partners, Inc. P.O. Box 9886 Newark, DE 19714-4986 Cell: 302-299-5919 ivmpartners@gmail.com www.ivmpartners.org

Youngstown State University Youngstown, Ohio Pre-Forestry, 1971-1974

Professional Experience

President, IVM Partners, Inc. (Integrated Vegetation Management Partners) 2003-Present

IVM Partners, Inc. is a 501-C-3 non-profit corporation operated to develop, educate professionals and the public with respect to, and apply integrated vegetation management practices to provide safe, reliable and accessible utility and highway rights-of-way (ROW), improve wildlife and endangered species habitats, control exotic weeds, and lower risk of wildfire. We develop partnerships between industry and government so that best practices are used to resolve vegetation management problems in military installations, communities, forests, parks, and wildlife refuges in a safe, economical and environmentally responsible manner; and with cooperation from universities and conservation organizations conduct research and disseminate information with respect to regional geo-physiological differences in vegetation management practices.

2020 Ongoing development of IVM case studies in South Carolina on Dominion Energy electric ROW in cooperation with Bayer and Clemson University.

2019 Ongoing development of a series of case studies on utility and highway ROW, golf course, and agriculture in Maryland for field tour education on IVM best practices in conjunction with the revised ANSI A-300 Part 7 - IVM Standard.

2019 Ongoing assistance in directing IVM ecosystem studies of plant community changes for Colorado open space, transportation and rangeland.

2019 Ongoing assistance in the development of an IVM program and directing ecosystem studies of plant community changes in various ecosystems for Enable Midstream natural gas in Oklahoma.

2019 Ongoing business partnership formed with Syngenta to develop a pollinator site value index (PSVI) metric for determining restored habitat benefits

2018 Advised Louisiana Department of Transportation and Entergy on new electric transmission clearing along interstate highway ROW to restore native early successional plant communities.

2018 Ongoing assistance to Delaware and Maryland Department of Agriculture to use IVM best practices to restore native pollinator and bird habitat along CRP land around cropped fields and tax ditches and reduce runoff and sedimentation of Chesapeake and Coastal Bays.

2018 Ongoing assistance to TC Energy in developing IVM management and cooperative case studies with West Virginia University and WV Dept of Natural Resources on natural gas transmission ROW through Lewis Wetzel Wildlife Management Area, West Virginia.

2017 Ongoing assistance to University of Illinois Chicago (UIC) Rights-of-Way as Habitat Working Group and USF&WS to develop an umbrella Candidate Conservation Agreement with Assurances (CCAA) for the monarch butterfly.

2017-18 Assisted in revising the IVM Best Management Practices manual for ANSI A300-Part7-IVM
2016-18 Developed a partnership and IVM plan for a natural gas pipeline replacement by TC Energy through Canaan Valley NWR with US Fish & Wildlife Service and WV Dept of Natural Resources
2016 Ongoing assistance to Enable Midstream Partners and Arkansas Natural Heritage in partnering to manage a rare corkwood shrub on natural gas ROW

2016-19 Assisted Avista on developing IVM management of electric transmission ROW in Eastern Washington, Montana and Northern Idaho with cooperative research with University of Idaho.

2016 Ongoing assistance to Choptank Electric Cooperative in documenting pollinator habitat restoration in cooperation with Washington College and MDOT

2016 Ongoing cooperation with Florida Department of Transportation in documenting pollinator habitat management on highway rights-of-way

2016-19 cooperation with Maryland State Highway Administration and University of Maryland to restore and document pollinator habitat management on highway rights-of-way

2016-18 cooperation with Ohio State University in documenting IVM techniques and pollinator benefits on shale gas ROW studies in Southeastern Ohio

2015 Ongoing business partnership formed with Bayer to develop IVM case study documentation of habitat changes and form a pollinator site value index (PSVI) and Biodiversity Index (BI).

2015 Ongoing partnership with Duke Energy in documenting IVM best practices on electric rights-of-way in North Carolina

2015 Ongoing cooperation with Alabama Department of Transportation in documenting pollinator habitat management on highway rights-of-way

2014 Ongoing cooperation with U.S. Fish & Wildlife Service and U.S. EPA in developing vegetation management recommendations for improving habitat for the Monarch butterfly and other pollinators

2014 Assisted the White House in developing a Federal Strategy for improving pollinator habitat.

2014 Ongoing assistance in the development of an IVM program and directing ecosystem studies of plant community changes in various ecosystems for Public Service of New Mexico, including a partnership with the Santa Ana Pueblo tribe.

2014 Ongoing assistance in the development of an IVM program and directing ecosystem studies of plant community changes in various ecosystems for Enable Midstream natural gas in Arkansas.

2014 Provided assistance to the Cecil County Waste Management in the development of IVM techniques to control invasive plants at a Maryland landfill.

2012 Signed Memoranda of Understanding with both the Wildlife Habitat Council and the Pollinator Partnership to support IVM techniques that meet primary objectives of safe, reliable and accessible utility ROW while being mutually beneficial to wildlife and pollinators.

2012 Assisted the International Society of Arboriculture in the development of a national ROW Stewardship Accreditation program to recognize IVM best practices by utilities.

2012-13 Assisted in revising the IVM Best Management Practices manual for ANSI A300-Part7

2011-14 Served as expert trainer of electric distribution tree maintenance and IVM for electric cooperatives under the Tennessee Valley Public Power Authority.

2011-14 Assisted in the development of a comprehensive IVM plan with botanical and photo documentation of rangeland and ROW habitat restoration for the Navajo Nation EPA.

2011-16 assisted the Wildlife Habitat Council in the development of IVM techniques to control invasive plants in Maryland corporate and natural areas

2005 Ongoing educational IVM and Ecosystem Management Workshops for U.S. EPA, FWS, Army Corp of Engineers, National Park Service, Bureau of Land Management, Forest Service, state and local governments and conservationists in Maryland, Virginia, Tennessee, Arizona and New Mexico

2009-16 assisted in the development of an IVM program and directing ecosystem studies of plant community changes in various ecosystems for Arizona Public Service, helping them achieve an award for ROW Stewardship Accreditation.

2009-16 assisted in the development of an IVM program and directing ecosystem studies on ROW for Baltimore Gas & Electric Company, with US F&WS, USGS, NJ Institute of Technology and Rutgers University in several communities and Patuxent National Wildlife Refuge.

2006-10 provided IVM consultation and professional contract applicators to control invasive plant species and improve wildlife habitat at Detroit River International Wildlife Refuge in Michigan and Eastern Neck National Wildlife Refuge in Maryland. Consultation guidance has also been provided to Eastern Mass-achusetts National Wildlife Refuge Complex.

2007 Ongoing assistance in the development of an IVM program and directing ecosystem studies of plant community changes following introduction of IVM techniques on Columbia Gulf (now TC Energy) Natural Gas ROW in Tennessee, in cooperation with the U.S. Army Corps of Engineers.

2006-10 Directed ecosystem studies of plant community changes following introduction of IVM techniques on ITC Holdings electric transmission rights-of-way in Michigan, in cooperation with the Huron-Clinton Metropark System.

Principal, VMES, LLC (Vegetation Management with Environmental Stewardship) 1999-Present

VMES is the leading consulting company specializing in Arboriculture and Integrated Vegetation Management best practice advice and training, and expert witness testimony for utility and roadside rights-of-way managers, contractors, government agencies, public utility commissions, environmental organizations and other land managers. We use an innovative approach to meet the primary objectives of safe, accessible and economical energy or transportation services or land management; while improving wildlife and pollinator habitat, invasive weed control, reduced wildfire risk, habitat restoration and environmental stewardship. **2019** Ongoing expert witness consultation to Lucas Tree Service for herbicide application in Connecticut.

2019 Provided vegetation management consultation to the City of Springfield, Missouri.

2018 Provided vegetation management consultation to McIntosh Perry relative to habitat management along a scenic railway project in Ontario province.

2018 Provided vegetation management consultation to Apex Clean Energy relative to development of pollinator habitat on solar energy projects

2017-18 Provided vegetation management consultation for Otero County Electric Cooperative relative to vegetation management practices, environmental stewardship, planning and wildfire prevention.

2017 Provided expert witness consultation to First Energy for vegetation management practices in West Virginia.

2017 Ongoing expert witness consultation to First Energy for vegetation management practices in Pennsylvania.

2017-20 Provided expert witness consultation to Grungo-Colarulo for vegetation management practices in New Jersey.

2016-17 Provided vegetation management consultation to Clean Line Energy for a proposed 720 mile 600kV direct current transmission line taking wind power energy to transmission grid in partnership with Department of Energy

2016-18 Provided vegetation management consultation to Jemez Mountains Electric Cooperative for vegetation management practices, environmental stewardship and wildfire prevention in New Mexico.

2016 Provided expert witness consultation to Harrington, Hoppe and Mitchell, LTD relative to tree maintenance practices in New Jersey.

2015 Provided expert witness consultation to the U.S. Department of Labor Occupational Safety & Health Administration (OSHA) relative to a fatal accident on electric transmission ROW

2015 Provided expert witness consultation to Blume, Donnelly, Fried, Forte, Zerres & Molinari relative to tree maintenance practices in New Jersey.

2015 Provided vegetation management consultation for Exelon relative to vegetation management practices and environmental stewardship in Maryland

2015 Provided expert witness consultation for Jafco Tree Service in litigation relative to vegetation management practices in New Jersey.

2014 Ongoing vegetation management consultation for Public Service of New Mexico electric transmission ROW.

2014- 15 Provided expert witness consultation for Jersey Central Power & Light and Tamarack Tree Service relative to vegetation management safety practices in New Jersey.

2012-18 Provided vegetation management consultation for EverPower wind power project turbines and generator lead transmission lines in California, Illinois, Maryland, New York and Pennsylvania.

2012 Ongoing vegetation management consultation for Choptank Electric Cooperative in Maryland.

2012-13 Provided vegetation management consultation for Vantage Energy Consulting in review of Long Island, NY electric utility vegetation maintenance practices and hurricane response/restoration

2011-14 Served as an expert witness for Penn Line Services in litigation relative to vegetation management practices on electric transmission and distribution rights-of-way.

2011 Served as an expert for the Maryland Public Service Commission in reviewing vegetation management practices of a utility licensing a new high voltage transmission line.

2010 Provided IVM consultation for Warren Electric Cooperative in Bowling Green, KY.

2010 Ongoing consultation for Enable Midstream Natural Gas in the development of a comprehensive vegetation management program and an Environmental Assessment for ROW in the Ouachita and Ozark National Forests of Arkansas, and Mark Twain National Forest in Missouri.

2006-10 IVM consultation for NiSource (Columbia Gas distribution) in the development of a comprehensive vegetation management program.

2005-10 Provided IVM consultation for developing a comprehensive vegetation management program for ITC Holdings electric transmission ROW in Michigan.

Conectiv Power Delivery (Atlantic City Electric & Delmarva Power)

Newark, Delaware

System Forester, 1998-2005

Managed vegetation on 2500 miles transmission and 13,000 miles distribution electric rights-of-way in southern New Jersey and the Delmarva Peninsula (states of Delaware, Maryland & Virginia). Work included line clearance, ROW access, wetland protection, wildlife enhancements, site landscaping & maintenance, and wood pole inspection/treatment, and successful negotiation and development of memoranda of understanding with federal and state environmental agencies, wildlife organizations and conservation groups. Advised the Edison Electric Institute (EEI) on endangered species and environmental laws and regulations and the development of Best Management Practices for ROW Vegetation Management; advised RISE & Crop Life International, Project Habitat, and Rutgers University Cook College Forestry School.

Delmarva Power

Salisbury, Maryland

Southern System Forester, 1979-1998

Managed vegetation on 1100 miles transmission and 4500 miles distribution electric ROW in southern Delaware and the Eastern Shores of Maryland and Virginia. Work included line clearance, ROW access, wetland protection, wildlife enhancements, site landscaping & maintenance, and building maintenance (1989-1993). Advised the Chesapeake Bay Program and the U.S. Environmental Protection Agency Office of Pesticide Programs on the actual field operations and needs of utility vegetation managers and helped guide their development of the Pesticide Environmental Stewardship Program (PESP). Managed Building Services (1988-1998) in addition to forestry within the Southern System, supervising and directing electrical, heating & air conditioning & facility maintenance and landscaping for 11 offices and grounds.

Monongahela Power

Fairmont, West Virginia

System Forester, 1977-1979

Managed vegetation on 5000 miles of transmission and 18000 miles distribution electric ROW in southern Ohio and northeastern West Virginia. Work included line clearance, R/W access and forest management of corporate land holdings.

Storm Restoration

Successful storm restoration work as System Forester on the Delmarva Peninsula included Hurricane Gloria (9/85), Ice Storm (2/94), Hurricane Fran (9/96), Hurricane Floyd (9/99) and Hurricane Isabel (9/03).

<u>Advisor</u>

2018-19 ROW Habitat Working Group for development of a CCAA with USFWS for the monarch butterfly 2017-18 Feed a Bee Steering Committee for pollinator enhancement grants 2017-18 Technical advisor to UAA for revision of ANSI A-300 Part 7: Integrated Vegetation Management 2016 Advised EPA on herbicide label language to improve drift control and pollinator habitat 2016 Ongoing advisor to USF&WS on developing IVM educational workshops 2015 Advised USF&WS and Trilateral Committee on restoring Monarch butterfly habitat in North America **2014** Advised White House and EPA on federal strategy to improve pollinator habitat on ROW. 2014 Advised Wildlife Habitat Council on revising their Wildlife Certification Program. 2012 Advised the development of a ROW Stewardship Accreditation Program. 2012 Advisor to the International Society of Arboriculture on revised ANSI Standard for IVM. 2011 Advised North American Electric Reliability Corporation (NERC) on best practices for electric grid reliability 2010-11 Advisor and judge of US Department of Defense Environmental Projects on military bases. 2010 Advised Eversource Energy on vegetation management practices for electric transmission on Cape Cod, MA. 2008-10 Chaired Rights-of-Way Task Force for the North American Pollinator Protection Campaign to produce "Plight of the Pollinator" brochure 2008 Invasive weed control advice for Eastern Massachusetts National Wildlife Refuge Complex 2006 USDA Northern Research Station. Invasive Species Research Program Technical Advisor 2006 Memorandum of Understanding between EEI and federal land management agencies (EPA, USFS, FWS, NPS, BLM) to adopt best IVM practices on federal land electric rights-of-way. 2004 United States-Canadian Blackout Report

1994-2016 EEI Vegetation Management Task Force

Video/DVD Productions

Training videos posted on <u>www.ivmpartners.org</u>

Bayer IVM Video 2017 https://youtu.be/x1gUvsZ K9g

Arizona Public Service 2014- Integrated Vegetation Management High Desert Workshop video: https://youtu.be/AzWFGPrODMs

DuPont 2012 - Integrated Vegetation Management Best Practices video.

U.S. Fish & Wildlife Service 2011 – Edit of National Training Center Study Guide for "Managing Utility Rights-of-Way for Wildlife Habitat" video. 2004 – Assisted in the production of the same video as the utility expert.

VMES, LLC & Virginia Polytechnic Institute and State University 2001, Integrated Vegetation Management: Principles and Practices for Rights-of-Way: <u>https://vimeo.com/17680673</u>

Edison Electric Institute Vegetation Management Task Force, 1996, Environmental Stewardship Strategy for Electric Utility Rights-of-Way.

Today's Environment Television Series 1995, Integrated Pest Management Segment Show #779

Publications

Johnstone, Richard A.

2019, "Walk a Mile in Their Shoes". Utility Arborist Newsline

https://www.gotouaa.org/wp-content/uploads/2019/01/UAN_JanFeb2019D.pdf

Johnstone, Richard A., William Rees, Richard Mason, Michael Haggie

2019, "Manage ROW Habitat and Reliability". T&D World. https://www.tdworld.com/vegetation-management/article/ 20972794/manage-row-habitat-and-reliability

Haggie, Michael R., Hubert A. Allen, Jr., Richard A. Johnstone

2018, "Formulation of PSVI to Measure the Benefits of ROW Habitat Change for Pollinators (Apis and Bombus spp.) Following the Management Transition From Traditional Cutting-Mowing Practices to IVM". 12th International Symposium on Environmental Concerns in Rights-of-Way Management. https://www.rights-of-way.org/wp-content/uploads/ 2019/11/12th-International-Symposim.pdf

Johnstone, Richard A., Haggie, Michael R.

2016, "Integrated Vegetation Management (IVM) Partnerships with Agencies and Utilities to Improve Habitat for Pollinators, Birds and other Wildlife". 11th International Symposium on Environmental Concerns in Rights-of-Way Management. https://drive.google.com/file/d/13vwmYJq6UxTxS5HAB8WSSsxFKwInBk9o/view

Johnstone, Richard A.

2016, "Where Have All the Foresters Gone?". Utility Arborist Newsline

Peterson, Johnstone, Ellsworth, Colony

2015, "Pollinators and Rights-of-Way." Utility Arborist Newsline

Johnstone, Richard A., Haggie, Michael R.

2014, "Integrated Vegetation Management Partnership Approach to Meeting NERC Electric Transmission Vegetation Standards." 10th International Symposium on Environmental Concerns in Rights-of-Way Management.

Johnstone, Richard A., Haggie, Michael R.

2014, "A Case for Pipeline IVM." 10th International Symposium on Environmental Concerns in Rights-of-Way Management.

Johnstone, Richard A., Haggie, Michael R.

2012, "Regional Vegetation Management Best Practices Case Studies: An Applied Approach for Utility and Wildlife Managers." 9th International Symposium on Environmental Concerns in Rights-of-Way Management.

Haggie, Michael R., Johnstone, Richard A., Allen Jr., Hubert A.

2008, "Tree, Shrub, and Herb Succession and Five Years of Management Following the Establishment of a New Electric Transmission Right-of-Way through a Wooded Wetland", 8th International Symposium on Environmental Concerns in Rights-of-Way Management.

Johnstone, Richard A., Haggie, Michael R., Allen Jr., Hubert A.

2002, "Tree, Shrub, and Herb Succession and Five Years of Management Following the Establishment of a New Electric Transmission Right-of-Way through a Mixed Woodland", 7th International Symposium on Environmental Concerns in Rights-of-Way Management.

Haggie, Michael R., Johnstone, Richard A., Limpert, Roland J., Hubert, A. Allen

1997, "Vegetational Succession Following a Broadcast Treatment of Glyphosate to a

Wild Reed Stand in a Utility Right-of-Way", 6th International Symposium on Environmental Concerns in Rights-of-Way Management.

Johnstone, Rick.

2014, "ROW Habitat Preservation", T&D World. August 2014 Straight Talk.

Johnstone, Rick.

2012, "Herbicides: Collaborative Efforts, Sustainable Results", T&D World.

Johnstone, Rick., Pardoe, Elaine

2011, "From Antagonism to Synergism: Integrated Vegetation Management", T&D World.

Johnstone, Richard A.

2010, "Effective Techniques for Invasive Plant Control and Wildlife Habitat Restoration: Integrated Vegetation Management at Eastern Neck National Wildlife Refuge", A Sustainable Chesapeake: Better Models for Conservation.

2010, "New Age Integrated Vegetation Management: A Green Approach to ROW Management", Tree Care Industry Magazine, Volume XXI, Number 2 – February 2010

2008, "Vegetation Management Best Practices for Reliability and Ecosystem Management", 8th International Symposium on Environmental Concerns in Rights-of-Way Management.

2008, "Integrated Vegetation Management", Utility Arborist Association Summer Quarterly

2006, "Vegetation Management: Best Practices for Reliability and Ecosystem Management", Utility Arborist Association Summer Quarterly.

1999, "Management vs. Maintenance: Contracting Methods", Utility Arborist Association Quarterly.

1993, "Vegetation Management with Environmental Stewardship", 5th International Symposium on Environmental Concerns in Rights-of-Way Management.

1990, "Vegetation Management: Mowing to Spraying", Journal of Arboriculture.

1988 "Economics of Utility Lateral Trimming", Journal of Arboriculture.

1983 "Management Techniques for Utility Tree Maintenance", Journal of Arboriculture.

Publications Referencing Johnstone's Work

2018 "Putting a Number to Bee Habitat"; The Wildlife Society; https://wildlife.org/putting-a-number-to-bee-habitat/ 2017 "Farmings' Future",;Bayer <u>https://www.cropscience.bayer.com/en/stories/2017/integrated-vegetation-</u> management-nature-and-technology-a-beautiful-partnership

2017 "Integrated Vegetation Management (IVM): Maintenance Strategy for Improved Pollinator Habitat and Economic Benefits in Conservation Reserve Program Plantings". United States Department of Agriculture

2016, The Smart Use of Controlled Herbicides, www.tdworld.com, June 2016

2015, The Costs of Maintaining and Not Maintaining the Urban Forest: A Review of the Urban Forestry and Arboricul-

ture Literature, Arboriculture & Urban Forestry 41(6): November 2015

2015, The Quiet Revolution Turning Roadsides Into Nature Reserves, Wired - April 2015

2013, Sustainably Managing Invasive Species at DuPont's Chesapeake Farms, Utility Arborist Newsline, Feb 2013

2013, Transmission & Distribution World: Best Practices in Vegetation Management, June 2013

2011, Utility Products, April 2011

2011, Public Utilities Fortnightly, May 2011

2010, Utility Arborist Newsline, January-February 2010

2009, Utility Arborist Quarterly, Summer

2008, BASF Latitude Magazine, Winter

2006, Utility Arborist Association Quarterly, Vol. 14, No 3

2006, Pesticide Net Insider eJournal, Vol. 3, No 11

2004, Pesticide.Net Insider eJournal, Vol.1, No 18

2004, Arboriculture, 4th Edition by Richard W. Harris

2002, Utility Arborist Association Quarterly, Vol. 11, No 2

2002, BASF Vegetation Management Latitude Magazine

2002, Dow Agro's Vista Magazine

2002, Asplundh's Tree Magazine

2002, Chesapeake Wildlife Heritage

2002, USDA Forest Service

2001, Tree Care Industry (Jan. and Sept. Issues)

2000, Arbor Age Magazine

1999, Utility Arborist Association Quarterly

1999, New Jersey Shade Tree Journal

1999, Dow Agro's Vista Magazine

1997, Chesapeake Wildlife Heritage

1997, Asplundh's Tree Magazine

1997, DuPont's The Vegetation Manager

1996, Arbor Age Magazine

1996, Asplundh's Tree Magazine

1996, Monsanto Open Lines

1996, Electrical World

1996, Electric Perspectives

1993 Grounds Maintenance

1993, Arbor Age Magazine

1992, Wildlife Habitat Enhancement Council

1992, National Agricultural Chemical Association's Growing Possibilities

1992, Arboriculture, 2nd Edition by Richard W. Harris

1991, Electrical World Magazine

1991, Monsanto Forum

1991, Transmission & Distribution Magazine

1988, Virginia Wildlife Magazine by Curtis Badger

Awards

- 2008-09 Presidential, Congressional, Global Register and Madison Who's Who
- 2007 Presidential Who's Who
- 2006 Global Register's Who's Who in Executives and Professionals
- 2003 Utility Arborist Association Education Award
- 2000-05 Tree Line USA Award from the National Arbor Day Foundation
- 2002 Project Habitat Award for improving electric ROW wildlife habitat in New Jersey
- 1997 Inclusion in International Directory of Distinguished Leadership 7th Edition.
- 1996 U.S. EPA Pesticide Environmental Stewardship Program Award
- 1990 Wildlife Habitat Enhancement Council Award for ROW habitat in Maryland

Lecturing and Training

2020 - Electric Power Research Institute (EPRI) webinar and ongoing www.ivmpartners.org 2019 - Western Society of Weed Science, Denver, CO; Southern ISA Conference, Mobile, AL; Missouri Electric Cooperative Association, Jefferson City, MO; Maryland DOT, Baltimore, MD; Colorado State University, Boulder, CO; Mid-Atlantic Invasive Plant Council, Juniata College, PA; Mountain Lake Vegetation Management Council, Virginia Beach, VA; Entomological Society of America, St. Louis, MO; Hydro One, Niagara on the Lake, Ont.; ROW as Habitat

Working Group, Cincinnati, OH 2018 - Trees and Utilities Conference, Omaha, NE; Southern ISA Conference, Memphis, TN; Georgia Vegetation Management Conference, Athens, GA; AL-GA Dept of Transportation IVM Field Workshop, Talladega, AL; FL Dept of

Transportation IVM Field Workshop, Lake City, FL; Duke Energy IVM Field Workshop, Durham, NC 2017 - Southern Gas Association Technical Conference on Environmental Permitting & Construction, Tampa, FL; Northeast Association of Fish & Wildlife Agency Conference in Norfolk, VA; Maryland Department of Agriculture in Easton and Salisbury MD; Electric Cooperative Herbicide Training in Athens, TN; With funding from Bayer "Feed a Bee Grants" IVM Workshops in Hotsprings, AR, Nashville, TN and Cambridge - St. Michaels, MD; Oregon and Tennessee Vegetation Management Association conferences; Arkansas Pollinator Summit, Little Rock, AR; ROW Habitat Working Group Conference in Chicago, Il

2016 – Maryland MP3 Pollinator Summit, PNM New Mexico Electric Cooperative Meeting, Think Trees New Mexico, Maryland Pesticide Safety Conference, Penn/Del Chapter ISA, NJ Garden State Tree Conference, Louisiana Department of Transportation, Iowa Utility-DOT Pollinator Summit, Association of Fish & Wildlife Agencies, Northeast Association of Fish & Wildlife Agencies, Southern Chapter ISA, Western Chapter UAA, USFS, FWS and SE Indiana Utilities, National Roadside Vegetation Management Association, Ohio State University, West Virginia University, Maryland State Highway Administration, University of Maryland, Bayer Crop Sciences, Clean Line Energy, Avista, North Carolina Vegetation Management Association

2015 – Alabama Vegetation Management Society, Vegetation Management Association of Kentucky, Centre for Energy Advancement Through Technical Innovation, Sand County Foundation, 71st Annual Northeast Fish & Wildlife Agency Conference, Trilateral Committee Conference, Western North Carolina Partners in Wildlife Program, Crop Life/RISE Conference, Western Chapter Utility Arborist Association, Energy Resources Center University of Illinois at Chicago, National Roadside Vegetation Management Association, 11th International Rights-of-Way Symposium, I-35 Monarch Restoration Initiative, Illinois Arborist Association, Arkansas Natural Areas Association, Wildlife Habitat Council, Association of Alberta Agricultural Fieldmen

2014- Midwest ISA, Penn/Del ISA, Utility Vegetation Management Association of Alberta Senior Management Summit, Maryland Managing Forest Pests for Watershed Restoration, Florida Gas Transmission IVM training, RISE IVM training, IVM Workshop for Public Service of New Mexico-US Forest Service-BLM and National Park Service, BGE and City of Baltimore IVM partnership training, EPA IVM Pollinator Training, USDA Forest Service IVM Pollinator Training, NRVMA Annual Conference, Ohio UAA Pollinator Summit, Vancouver, BC IVM Conference

2013 – Industrial Vegetation Management Association of Alberta, Florida Vegetation Management Association, Tennessee Valley Public Power Authority, Ontario Vegetation Management Association, Mountain Lake Vegetation Management Council, Tennessee Vegetation Management Association, Brazil Vegetation Management, Wildlife Habitat Council Annual Conference, Enable Midstream IVM Training

2012 – Training for Tennessee Valley Public Power Authority, 7th International IPM Symposium, Navajo Nation, 10th International ROW Symposium, MD/DC Utility Association, Maryland Sustaining Nature Workshop, National Association of Conservation Districts, Wildlife Habitat Council

2011 - Southern Gas Association, University of Maryland Extension, Electric Cooperatives in Indiana, Wildlife Habitat Council.

2010 – Army Corp of Engineers Environmental Conference, American Gas Association, Weeds Across America, American Gas Association, Navajo Nation, Environmental League of Massachusetts, Electric Cooperatives in Tennessee and North Carolina.

2009 – 6th International IPM Symposium, 9th International ROW Symposium, 1st Ag Pollinator Conference, The Stewardship Network, IVM and Ecosystem Management Workshops for U.S. EPA, National Park Service, Army Corp of Engineers

2008 - State of Rhode Island, North American Pollinator Protection Campaign

2007 – Wildlife Habitat Council, State of Connecticut

2005-2008 - IVM recertification training for TCD and the State of Michigan

2005 - 2008 - conduct IVM workshop for federal agency personnel at Chesapeake Farms, MD

2007 - U.S. Environmental Protection Agency Endangered Species Section

1995 – Present; guest lecturer on Utility Arboriculture and Integrated Vegetation Management at the following institutions: Delaware State University, Rutgers University, University of Delaware, West Virginia University, Williamson Free School, Purdue University

1990 – Present; Integrated Vegetation Management training for the following organizations: U.S. Department of Defense, U.S. Environmental Protection Agency, U.S. Department of Interior (National Park Service, Fish & Wildlife Service), Delaware Department of Agriculture, Maryland Department of Agriculture, New Jersey Department of Environment, Maryland Governor's Pesticide Council, Chesapeake Bay Program, International Invasive Weed Council, Mid-Atlantic Invasive Weed Council, Maryland Invasive Weed Council, Weed Science Society, Transportation Safety Board, National Roadside Vegetation Management Association, North Carolina Vegetation Management Association, Alabama Vegetation Management Association, Kentucky Vegetation Management Association, West Virginia Vegetation Management Association, Mountain Lake Vegetation Management Council, CropLife America, Responsible Industry for a Sound Environment, Environmental Concerns in Right-of-Way Management (5th, 6th, 7th, 8th, 9th, 10th, 11th Symposia), Platts Utility Vegetation Management Conference (2nd, 3rd), Northeast IPM Conference, International Society of Arboriculture Conferences, ISA Chapter Conferences (Indiana, Penn-Del, Mid-Atlantic, Southeastern, Florida, Western, Northwest, New England), Minnesota PIE, National Arbor Day Foundation Trees & Utilities Conferences, International Association for Great Lakes Research, National Wild Turkey Federation, Ducks Unlimited, Quail Unlimited, 1990 People to People International ambassador to former Soviet Republics of Russia and Ukraine for agricultural science exchange with Maryland Department of Agriculture.

Professional Association Service

Registered Professional Forester in Maryland Utility Arborist Association, Past President Edison Electric Institute, Past Issue Chairman for Vegetation Management Task Force Delaware Center for Horticulture, Past Board of Director Maryland Coastal & Watershed Resources Advisory Council, Past Environmental Chair Maryland Electric Reliability Tree Trimming Council, Past Chairman Maryland County Forestry Board, Past Chairman Chesapeake Bay Program, Pesticide Work Group West Virginia Vegetation Management Association, Past Secretary/Treasurer Mountain Lake Vegetation Management Council, Board Member Delmarva Agricultural Chemical Association, Past President Delaware Urban Forestry Council Member Maryland Community Forest Council Member Delaware Department of Transportation Horticulture & Vegetation Management Advisory Council Member Mid-Atlantic, Delaware and Maryland Invasive Weed Councils Member New Jersey IPM Task Force Advisor The International Society of Arboriculture Member Utility Arborist Association (Michigan, Mid-Atlantic, Penn-Del Chapters) Responsible Industry for a Sound Environment & Crop Life International Advisor Rutgers University Forestry Advisor Society of American Foresters Member

<u>Personal</u>

Married with four children and six grandchildren and enjoys hunting, fishing, boating, and golfing.