

CHARTING OUR FUTURE: NEW TOOLS FOR COMPLEX CHALLENGES

24TH ANNUAL ENVIRONMENT VIRGINIA SYMPOSIUM 9 - 11 APRIL 2013

VIRGINIA MILITARY INSTITUTE • CENTER FOR LEADERSHIP AND ETHICS • LEXINGTON, VIRGINIA

All sessions will take place in Marshall Hall, unless otherwise noted

Tuesday, 9 April

9:00 am – 11:30 am

Exhibit Set-up

9:00 am – 5:30 pm

Attendee Registration

9:30 am – 11:30 pm

Session A (see topics page 3)

11:30 am – 8:00 pm

Visit Exhibits

11:30 am – 1:00 pm

Lunch

11:30 am – 12:00 pm

Book signing with Dr. Johansen

1:00 pm – 2:30 pm

Opening Session

Welcoming Remarks

General J. H. Binford Peay III, U.S. Army (Retired), Superintendent, VMI

Future Trends – Thriving Leadership

Dr. Robert Johansen, Institute for the Future

Introduction by Bill Gill, Assistant Vice President, Environmental Affairs, Smithfield Foods and Chair, Global Environmental Management Initiative (GEMI)

2:45 pm – 4:00 pm

Session B (see topics page 3)

4:15 pm – 5:30 pm

Session C (see topics page 3)

5:30 pm – 7:00 pm

Opening Reception

Wednesday, 10 April

7:00 am – 5:30 am

Attendee Registration

7:30 am – 8:30 am

Buffet Breakfast

7:30 am – 5:30

Exhibit Hall Open

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Preliminary schedule as of 9 April 2013

1/16

8:30 am – 9:30 am	20th Anniversary of DEQ – Celebrating our Success <i>David Paylor, Director, Virginia Department of Environmental Quality</i> THE FUTURE: Environmental & Energy Priorities <i>The Honorable Doug Domenech, Virginia Secretary of Natural Resources</i> <i>Introduction by Ann Jennings, Virginia Executive Director, Chesapeake Bay Foundation</i>
9:30 am – 9:00 pm	VOTE – Virginia's Environmental Futures Survey – 2 nd floor
9:45 am – 11:00 am	Session D (see topics page 3)
11:30 am – 1:30 pm	Lunch Visit Exhibits
11:15 am – 12:30 pm	Session E (see topics page 3)
12:45 pm – 2:00 pm	Session F (see topics page 3)
2:15 pm – 3:15 pm	A Virginia Coastal Community and the Environment: A 21st Century Challenge <i>The Honorable Paul Fraim, Mayor, City of Norfolk, VA</i> <i>Introduction by Brigadier General Robert L. Green, Deputy Superintendent, VMI</i>
3:30 pm – 4:45 pm	Session G (see topics page 3)
5:30 pm – 8:00 pm	Environment Virginia Banquet (extra registration) <ul style="list-style-type: none"> • <i>Flora of Virginia</i> – John Clayton as portrayed by Richard Cheatham • Presentation of Governor's Environmental Excellence Awards and Erchul Environmental Leadership Award

Thursday, 11 April

7:00 am – 8:00 am	5K Fun Run and Walk (VMI North Post)
7:00 am – 12:00 am	Attendee Registration
7:30 am – 8:30 am	Breakfast
7:30 am – 1:00 pm	Exhibit Hall Open
8:30 am – 9:30 am	Session H (see topics page 3)
9:45 am – 10:45 am	Session I (see topics page 3)
11:00 am – 12:00 pm	Environmental and Economic Sustainability for Manufacturers <i>Moderator: Gerald P. McCarthy, Executive Director, Virginia Environmental Endowment</i> <ul style="list-style-type: none"> • Raul Diaz-Lugo, Plant Manager, Stonewall Bio/Pharmaceutical Operations, Merck • Jim Marcinko, Area Director of Operations, Recycling and Waste Diversion, Waste Management
12:15 pm – 1:30 pm	Luncheon (extra registration) <i>Speaker: Rebecca Hough, Co-founder and COO, Evatron</i> <i>Secretary Domenech—Testing a New Tool: Interactive Polling Using Response Technology</i>
12:15 pm – 2:00 pm	<i>Sustainability in Higher Education Luncheon and Virginia Sustainability in Higher Education Consortium Quarterly Meeting (Crozet Hall - Sub Mess)</i>
1:30 pm	Adjourn

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	Tuesday			Wednesday				Thursday	
Subject	A 9:30 am - 11:30 am	B 2:45 pm - 4:00 pm	C 4:15 pm - 5:30 pm	D 9:45 am - 11:00 am	E 11:15 am - 12:30 pm	F 12:45 pm - 2:00 pm	G 3:30 pm - 4:45 pm	H 8:30 am - 9:30 am	I 9:45 am - 10:45 am
					Lunch 11:30 - 1:30				
One <i>pg.4</i> Trending to Net Zero	Alternative Fuel Vehicles			Net Zero 1 Energy Management		<i>No programming</i>	Net Zero 2 Water Efficiency and Reuse	Net Zero 3 Materials Recovery	
Two <i>pg.6</i> Stormwater	Developing a Local Program	Local Ordinances	ePermitting	MS4 Next Generation	Construction General Permit	Financing your Stormwater Program	Establishing a Stormwater Utility	Manufactured Treatment Devices (VTAP)	
Three <i>pg.8</i> Social Media		Social Media 101	Social Media 102	Developing your Voice and Using Metrics	Reputation Building and Damage Control	<i>No programming</i>	Emergency Preparedness and Response	Video Messaging and YouTube	
Four <i>pg.9</i> Reducing Nutrients		UVA Bay Game (Limited number of players!)		Measuring Progress at the Local, Regional and State Levels	James River Chlorophyll Study	Wastewater	Voluntary Initiatives (Including RMPs)	A New Era in Nutrient Credit Trading	
Five <i>pg.11</i> Education		Community Involvement Paper Session	Environmental Ed. Paper Session	Preparing for the Next Big Storm	<i>No programming</i>	<i>No programming</i>	Factoring in Human Behavior	Funding Campus Sustainability	Revolving Loan Fund
Six <i>pg.12</i> Ecology		Ecological Regions and Natural Areas of Virginia	<i>Flora of Virginia</i>	Field Trip: A Walk Down to the River		<i>No programming</i>	Ecology and Collaboration Paper Session	<i>Flora of Virginia</i>	LiDAR and Sea-level Rise
Seven <i>pg.14</i> Energy Development			Energy and Water Quality Paper Session	Uranium: Synthesizing Lessons Learned	<i>No programming</i>	Virginia's Pursuit of Off- Shore Wind	Hydraulic Fracturing, H2O Resources, GW National Forest	Geothermal Heating and Energy Conservation	
Eight <i>pg.15</i> Our FUTURE	Envisioning: Energy	Envisioning: Water Quality	Envisioning: Water Supply	Envisioning: Growth – Waste, Infrastructure	Envisioning: Growth - Air, Water, Land	Envisioning: Climate Trends	Next Generation Regulations – Breaking the Logjam	Next Generation Regulations in Virginia	

Alternative Fuel Vehicles—Track 1

Save money and build local economy

Tuesday, 9 April

9:00 a.m.

Registration and Coffee

Host: Steven P. LeBlanc, Chief of Customer Service and Logistics, Physical Plant, Virginia Military Institute

Session A (9:30 am – 11:30 am)

New Market Room, Marshall Hall

- **Introduction to Alternative Fuel Vehicles**—Cathie France, Deputy Director, Virginia Department of Mines, Minerals and Energy
- **SNAPSHOTS: Who's doing what in VA?**
 - Natural Gas
 - The Honorable George Hrichak, Fleet Manager, City of Chesapeake and Board of Supervisors, York County.
 - Hank Brown, Director of Fleet Maintenance, TFC Recycling;
 - Mike Kearns, Energy Services Manager, City of Richmond
 - Biodiesel— Allen Mitchell, Chief, Equipment, Arlington County
 - Propane
 - Jerry Farmer, Operations Superintendent, City of Newport News
 - Tripp Greene, Virginia Autogas
 - Electric – Andrew Flavin, Alternative Energy Research Analyst, Dominion Resources
- **Public-Private Sector Leadership to Reduce Fuel Costs**— Michael L. Bisogno, Director, Office of Fleet Management Services, VDGS
- **Alternative Fuels - Paper Session**

Moderator: Major Tim Moore, Assistant Professor of Civil Engineering, VMI

 - (S)A Novel Harvesting Strategy for Algae-based fuels—Caleb Talbott, Student, and Premal Patel, Student, James Madison University
 - (S)Reducing the cost of Biodiesel Production in Virginia—Jonathan Hawkins, Student and Jason McNamara, Student, James Madison University
 - (S)Converting Waste Cooking Oil to Biodiesel – Parker Helble, Student, James Madison University
 - (S)Novel Vehicle Exhaust Emission Reduction Technology—Joseph Crosbie, Student, James Madison University

B and C (2:45 – 5:30)

New Market Room, Marshall Hall

Interest – Feasibility – Deployment

Moderator: John Warren, President of the Board of Directors, Virginia Clean Cities

- **Review Opportunities and Information** (Sabrene Bader, Director of Grants Administration, Virginia Clean Cities, and Mr. Bisogno)
- **Get Buy In from All Parties** (Ms. France and Mr. Hrichak)
- **Run the Numbers to Build your Case** (Mr. Kearns and Mr. Farmer)
- **Knowing Vendors** (Mr. Brown and Mr. Warren)
- **Deployment and Evaluation** (Mr. Mitchell and Mr. Kearns)
- **Breakout groups for in-depth discussion** - Compressed Natural Gas – Propane – Biofuels - Electric
- **Closing Group Discussion and Readouts from Breakout Groups**

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Trending to Net Zero—Track 1

Wednesday, 10 April

D and E (9:45 – 12:30)

New Market Room, Marshall Hall

Energy Management

Moderator: Christie-Joy Hartman, Executive Director, Office of Environmental Stewardship and Sustainability, JMU

- The Energy Pyramid as a Guiding Principal in the Move to Net Zero—Mike Barancewicz, Energy Education Specialist and John Lord, Energy Education Specialist, Loudoun County Public Schools
- Practical Lessons Learned from Putting Energy Savings Ideas into Practice—Dave Gunnarson, Senior Staff Environmental Engineer, Lockheed Martin
- Statewide Demand Response Program Saves Energy and Generates Revenue—George Barnes, Sr. Regional Sales Director, EnergyConnect, Johnson Controls, MAJ Todd Pegg, Energy Manager, VMI, and MAJ Jenny deHart, Sustainability Coordinator, VMI
- Savings—Easy as Changing a Light Bulb—Blase Keegel, Utilities Manager, Philip Morris USA
- (S) Driving Cultural Change Towards Zero Waste*—David Bryer, Senior Environmental Engineer, and Leesa Kraemer, Safety, Health and Environment, Team Evergreen Chair, Mead Westvaco

G (3:30 – 4:45)

New Market Room, Marshall Hall

Water Efficiency and Reuse

Moderator: Anthony Moore, Deputy Secretary of Natural Resources for Bay Restoration, Commonwealth of Virginia

- Embracing Water Efficiency Practices*—Steve Cavanaugh, President, Cavanaugh and Associates, Inc.
- Reuse of Wastewater – A Manufacturer’s Experience—Steve Pierett, CEM, Environmental Manager, Volvo Group, USA
- Water Conservation and Reuse at Georgia-Pacific Facilities - Mayes Starke, Senior Environmental Consultant, Georgia-Pacific

Thursday, 11 April

H and I (8:30 – 10:45)

New Market Room, Marshall Hall

Materials Recovery

Moderator: Jeffrey Steers, Director, Division of Land Protection & Revitalization, VA DEQ

- Managing risk in getting to zero waste – Update from DEQ (10 minutes)
- Papers (35 minutes)
 - Smithfield Foods Zero Waste to Landfill Standard*—Roland Beem, Environmental Engineer, Smithfield
 - Zero Wood Pallet Waste is Possible in VA and the US*—Phil Araman, Research Team Leader, USDA
 - (S) A Tool to Assess the Sustainability of Poultry Litter to Energy Systems*—Dr. Adebayo Ogundipe, Assistant Professor, Engineering, James Madison University
- eWaste/eCycling (40 minutes)
 - Russ Rainer, E-ReCycle Manager, Goodwill Industries
 - Debbie Spiliotopoulos, Senior Regional Planner, Northern Virginia Regional Commission
- Recycling (20 minutes)
 - RFID Technology to Up the Game for Recycling – Amelia Baker, Marketing Project Manager, TFC Recycling & Recycling Perks
- Questions – Discussion (15 Minutes)

Stormwater—Track 2

Tuesday, 9 April

A (9:30 – 11:30)

Gillis Theater, Marshall Hall

Developing a Local Program

Welcome: David Johnson, Director, Department of Conservation and Recreation (DCR)

Introduction: Ginny Snead, P.E., Regulatory Programs Manager, Div. of Stormwater Management, DCR

- Jackie Rickards, Regional Projects Planner, Middle Peninsula PDC
- Scott Thomas, Director, Engineering and Resource Protection Division, James City County
- Richard Street, Senior Environmental Engineer, Spotsylvania County
- Cost Effective Best Management Practices in Virginia and Local Implementation Planning*—Adrienne Kotula, Policy Specialist, James River Association
- Panel discussion with all presenters and DCR representatives

Hear from localities that are in the process, what they are finding as far as funding needs, staffing needs, administrative processes, and what they have learned so far.

B (2:45 – 4:00)

Gillis Theater, Marshall Hall

Model Ordinances

Moderator: Delegate David Bulova, Virginia House of Delegates

- Ann Neil Cosby, Counsel, Sands Anderson
- Joe Battiatia, Senior Water Resources Engineer, Center for Watershed Protection
- They Killed Two Birds with One Stone: Development Ordinances that Achieve Stormwater Goals*—Adrienne Kotula, Policy Specialist, James River Association
- Panel discussion with all presenters and DCR representatives

What needs to be included in your model ordinance? Hear some lessons learned from localities who have written their model ordinance. Share ideas for how to handle some of the issues that have come up.

C (4:15 – 5:30)

Gillis Theater, Marshall Hall

Virginia Stormwater ePermitting System

Moderator: Brian Stokes, Environmental Manager, Campbell County

Presenter: Gerry Seeley, Enterprise Website Project Coordinator, DCR

The Virginia Department of Conservation and Recreation is developing an interactive website that will be used to obtain coverage under the State General Permit for Discharges of Stormwater from Construction Activities beginning July 1, 2014. The Alpha (test) version of this website will be demonstrated so that local officials, developers, and engineers can get a preview of how the new ePermitting system will work.

Wednesday, 10 April

D (9:45 – 11:00)

Gillis Theater, Marshall Hall

MS4 Next Generation

Moderator: Chris Pomeroy, President, AquaLaw

- Ginny Snead, P.E., Regulatory Programs Manager, Division of Stormwater Management, DCR
- EPA's Stormwater Program, Priorities and MS4 Inspection Activities—Andy Dinsmore, Stormwater Team Leader, US EPA, Region III

E (11:15 – 12:30)

Gillis Theater, Marshall Hall

Construction General Permit

Moderator: Ginny Snead, P.E., Regulatory Programs Manager, Division of Stormwater Management, DCR

- 2014 Construction General Permit—Normand Goulet, Senior Environmental Planner, Northern Virginia Regional Commission
- Translating the Virginia General Permit for Discharges of Stormwater from Construction Activities—Drew Hammond, DEQ
- The “Energy Balance” Method of Stormwater Management*—Michael Rolband, President, Wetland Studies and Solutions, Inc.

F (12:45 – 2:00)

Gillis Theater, Marshall Hall

Stormwater Financing Options

Moderator: Clyde Cristman, Legislative Analyst, Senate Finance Committee

- Nissa Dean, Virginia Director, Alliance for the Chesapeake Bay-River Wise Program
- Randy Bartlett, P.E., Department of Public Works and Environmental Services, Fairfax County
- Integrated Planning for Water Quality in the City of Richmond, VA*—Robert Steidel, Director of Public Utilities, City of Richmond

G (3:30 – 4:45)

Gillis Theater, Marshall Hall

Establishing a Stormwater Utility

Moderator: Lisa Jeffrey, Brown and Caldwell

- Trends in Stormwater Utilities Across the Nation—Prabha Kumar, Director, B&V Management Consulting, Black and Veatch
- Established Program—Michelle Virts, City of Richmond
- New Programs
 - Erin Hawkins, Water Quality Manager, City of Lynchburg
 - Ray Moyer Jr., Engineer, City of Staunton

Thursday, 11 April

H and I (8:30 – 10:45)

Gillis Theater, Marshall Hall

Private Sector Opportunities – Manufactured Treatment Devices (VTAP)

Moderator: Jane Walker, Research Associate, VA Water Resources Research Center

- Advancing Stormwater Treatment with High Flow Rate Bioretention Design*—Chris French, Stormwater Regulatory Manager, Filterra Bioretention Systems
- Assessing Performance of Manufactured Treatment Devices for Treatment of Stormwater
 - The Virginia Technology Acceptance Protocol (VTAP) Program—C. Scott Crafton, Stormwater Compliance Specialist, DCR
 - Technical Development of VTAP—David J. Sample, Assistant Professor and Extension Specialist, Virginia Tech
- Field Testing of Imbrium Systems’ Jellyfish® Filter Using the Virginia Technology Assessment Protocol (VTAP)—Joel Garbon, Regulatory and Technical Specialist, Imbrium Systems

* Paper presentation - (S) Speed presentation

Social Media—Track 3

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Tuesday, 9 April

B (2:45 – 4:00)

Board Room, Marshall Hall

Social Media 101

Moderator: Dave Gunnarson, Lockheed-Martin

- Scott Dickens, President and Executive Producer, Rocket Pop Media
- Cara Dickens, Vice President and Producer, Rocket Pop Media
- Mike Baum, Executive Director, Keep Virginia Beautiful

An introduction to the different types of social media, this session will explain how to get started and what tools are available to make the process easier. Learn how to address management hesitations regarding the risks associated with using social media as well as the wealth of possible benefits.

C (4:15 – 5:30)

Board Room, Marshall Hall

Social Media 102

Moderator: Sylwia LaBudde, Smithfield Foods, Inc.

- Scott Dickens, President and Executive Producer, Rocket Pop Media
- Cara Dickens, Vice President and Producer, Rocket Pop Media
- Mike Baum, Executive Director, Keep Virginia Beautiful

Once you have established a social media presence, how do you stay relevant on a limited budget? How much time is required? Learn how to deal with privacy concerns. What is the future of social media and how will that impact your organization?

Wednesday, 10 April

D (9:45 – 11:00)

Board Room, Marshall Hall

Developing Your Voice and Using Metrics

Moderator: Ann Regn, DEQ

- Mark Haviland, Chief of Public Affairs, USACE
- Bob Spieldenner, Director of Public Affairs, Virginia Department of Emergency Management
- Lynn Chaffin, Director of Social Media and Communications Planning, Dominion

Every post reflects your brand. Learn how to develop a strategy for posting and use metrics to enhance your success.

E (11:15 – 12:30)

Board Room, Marshall Hall

Reputation Building and Damage Control

Moderator: Zoe Myers, Georgia Pacific

- Kathleen Kirkham, Sustainability and Social Media Manager, Smithfield
- Major Jennifer Gerow, Assistant Professor, Economics and Business, VMI
- Crisis Management: Legal Implications of Initial Decisions* — Paul Thomson, Attorney, Woods Rogers and Daniel Summerlin, Attorney, Woods Rogers

Learn when and how to react to negative posts.

G (3:30 – 4:45)

Board Room, Marshall Hall

Emergency Preparedness and Response

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Moderator: Jim Thornton, Newport News Shipbuilding

- Lynn Chaffin, Director of Social Media and Communications Planning, Dominion
- Bob Spieldenner, Director of Public Affairs, Virginia Department of Emergency Management
- Natalie Easterday, Hampton Roads Planning District Commission

Social media is quickly becoming an essential tool in emergency preparedness and response. Learn how the state, localities, and companies are incorporating social media into their public information plan.

Thursday, 11 April

H and I (8:30 – 10:45)

Board Room, Marshall Hall

Video Messaging and YouTube

Moderator: TBA

- Scott Dickens, President and Executive Producer, Rocket Pop Media
- Major Jennifer Gerow, Assistant Professor, Economics and Business, VMI

* Paper presentation - (S) Speed presentation

Reducing Nutrients—Track 4

Tuesday, 9 April

B and C (2:45 – 5:30)

Hall of Valor, Marshall Hall

UVA Bay Game

Host: Major Pieter deHart, Assistant Professor of Biology, VMI

Facilitators:

- Jeffrey Plank, Associate Vice President for Research, University of Virginia
- Michael Purvis, Research Specialist, Department of Systems and Information Engineering, University of Virginia
- David Smith, Professor, Department of Environmental Sciences, University of Virginia

Wednesday, 10 April

D (9:45 – 11:00)

Pogue Auditorium, George C. Marshall Museum

Measuring Progress at the Local, Regional and State Levels

Moderator: Ann Swanson, Executive Director, Chesapeake Bay Commission

- 2012 State of The Bay Report: Twelve Years of Reporting on Progress—Ann Jennings, Virginia Executive Director, Chesapeake Bay Foundation
- 2012-2013 Non-Point Source Milestones—James Davis Martin, Chesapeake Bay Program Coordinator, DCR
- 2012 Rivanna Watershed Snapshot: Watershed-based Planning for Progress —Leslie Middleton, Executive Director, Rivanna River Basin Commission

E (11:15 – 12:30)

Pogue Auditorium, George C. Marshall Museum

James River Chlorophyll Study

Moderator: Alice Scott, Virginia Manufacturers Association

- Arthur Butt, Office of Water Monitoring and Assessment, DEQ
- David Jasinski, Analyst, Chesapeake Environmental Communications, Inc.
- Dr. Paul Bukaveckas, Associate Professor, Biology, Virginia Commonwealth University

F (12:45 – 2:00)

Pogue Auditorium, George C. Marshall Museum

Wastewater

Moderator: Joe Milo, Executive Director, Maury River Service Authority

- Point Source Nitrogen Removal: Transitioning from Version 1.0 to 3.0—Dr. Charles Bott, Research and Development Manager, Hampton Roads Sanitation District
- Abhay Kirpekar, Merck
- Design of a Zero Discharge Wastewater Treatment Facility*—Brent Waters, Principal Hydrogeologist, Golder Associates Inc.

G (3:30 – 4:45)

Pogue Auditorium, George C. Marshall Museum

Voluntary Initiatives

Moderator: Darrell Marshall, Agricultural Stewardship Program Manager, Virginia Department of Agriculture and Consumer Services

- Resource Management Plans
 - James Davis Martin, Chesapeake Bay Program Coordinator, DCR
 - Bryan Wagner, Chairman, Thomas Jefferson Soil and Water Conservation District and Co-Founder, Ecosystem Services, LLC
- Virginia's Small Animal Feeding Operations Evaluation and Assessment Strategy—Neil Zahradka, Manager, Office of Land Application Programs, DEQ
- (S)Switchgrass Beneficial Bacterial Endophyte Interactions to Improve Soil Remediation*—James Lowman, PhD Student, Virginia Tech
- (S) A modeling Toolbox and Process for Setting Site Specific Nutrient Goals*—Clifton Bell, Technical Leader, Watersheds & TMDLs, Brown and Caldwell

Thursday, 11 April

H and I (8:30 – 10:45)

Pogue Auditorium, George C. Marshall Museum

A New Era in Nutrient Credit Trading

Moderator: Ginny Snead, DCR

- Policy Issues Related to Trading in the Bay Region—Joseph Maroon, Principal, Maroon Consulting
- Expansion on the Nutrient Credit Exchange
 - Ginny Snead, DCR
 - S. Taylor Goodman, P.E., Balzer and Associates, Inc.
- Verification Protocols
 - Jack Frye, Virginia Director, Chesapeake Bay Commission
 - Rich Batiuk, Associate Director of Science, Chesapeake Bay Program Office, EPA
- Technical Analysis for Nutrient Crediting of Manure Conversion Projects*—Kurt Stephenson, Professor, Agriculture and Applied Economics, Virginia Tech

* Paper Presentation - (S) Speed Presentation

Education—Track 5

Tuesday, 9 April

B (2:45 – 4:00)

2nd Floor Board Room, Moody Hall

Community Involvement Paper Session

Moderator: Ann Regn, Director, Information and Outreach, DEQ

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- A successful Partnership for Community Education*—Karen Forget, Executive Director, Lynnhaven River NOW and Bill Johnston, VPDES Permit Administrator, City of Virginia Beach
- (S)Monitoring harmful marine Debris, one Balloon at a time*—Katie Register, Executive Director, Clean Virginia Waterways and Christina Trapani, Stranding Information Specialist, Virginia Aquarium and Marine Science Center
- Environmental Justice Implication of Air Pollution in the Norfolk, Virginia Area*—Peerawat Charuwat, Cadet, Virginia Military Institute
- (S) Achieving A Deeper Shade of Green*—Rebecca Rubin, President, Marstel-Day, LLC
- Zero Wood Construction Waste is Possible in Homebuilding*—Phil Araman, Research Team Leader, USDA Forest Service Southern Research Station

C (4:15 – 5:30)

2nd Floor Board Room, Moody Hall

Environmental Education Paper Session

Moderator: Mike Foreman, Manager, Office of Environmental Education, DCR

- Educating about Health + Design: A Critical Evaluation of the Learning Barge*—Phoebe Ann Crisman, Associate Dean for Research, School of Architecture, University of Virginia
- Systemic Environmental Literacy Program*—Cindy Duncan, Teacher Professional Development Coordinator and Bill Portlock, Senior Educator, Chesapeake Bay Foundation
- (S) The Places We Eat: Leveraging the Power of Design to Transform Childhood Wellness*—Robert Moje, Principal, VMDO Architects
- (S)Palletecture: Reuse of Materials and Growth of Green Roofs at a New Bus Stop Structure*—Kenneth Black, Student, School of Architecture + Design, Virginia Tech

Wednesday, 10 April

D (9:45 – 11:00)

Shenandoah, Marshall Hall

Floodplain Management—Preparing for the Next Big Storm

Moderator: Blaine Delaney, Watershed Program Coordinator, NRCS

- National Flood Insurance Program's Community Rating System—Charley Banks, Floodplain Program Engineer, DCR
- Community Rating System in Portsmouth, Virginia—Fred Brusso, Jr., Interim Planning Director, City of Portsmouth
- Building Capacity to Respond to Future Storm Events—Mark Slauter, Virginia Department of Emergency Management
- Rockbridge County's Perspective on the Next Big Storm—Robert Foresman, Emergency Management Coordinator, Rockbridge County

G (3:30 – 4:45)

Shenandoah, Marshall Hall

Factoring in Human Behavior

Moderator: Colonel Dave Cotting, Associate Professor, Dept. of Psychology and Philosophy, VMI

- Employee waste reduction program —Amanda Bodle, Executive Director, Institute for Stewardship of the Natural World, James Madison University
- Learning communities, curriculum, and research—Andrew Wingfield, Sustainability Studies Fellow, George Mason University
- Energy dashboard – is it worth the hype?—Julio Stephens, Sustainability Coordinator, Radford University

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- The living laboratory: designing a student behavior change study—Rick Roth, Professor, Radford University
- Banking on behavior: outside firm helps us change and saves us money and energy—Morris Trimmer, Energy Specialist, and Jane Stewart, Energy Specialist, Washington and Lee University
- Stewardship and Sustainability in the Port of Virginia—Heather Wood, Director, Environmental Affairs, Virginia Port Authority

Thursday, 11 April

H and I (8:30 – 10:45)

2nd Floor Board Room, Moody Hall

Funding Campus Sustainability

Moderator: Lieutenant Colonel Irma Bailey, Comptroller, VMI

- Third Party Financing for On-Campus Renewable Energy*—Anthony Smith, President, Hugh Stoll, Chief Technology Officer, and Matthew Ruscio, Special Projects Coordinator, Secure Futures
- Revolving Loan Funds - The Billion Dollar Green Challenge—Rob Foley, Senior Research Fellow, Sustainable Endowments Institute
- **Panel Discussion**
 - Revolving loan fund—Kim Blair, Ph. D., Ferrum College
 - Student Green Fees—Jesse Freedman, Hollins University
 - Green RFP—Denny Cochrane, Virginia Tech

Small group breakout discussions with panelists and presenters: what are your biggest funding challenges? (40)

* Paper Presentation - (S) Speed Presentation

Ecology—Track 6

Tuesday, 9 April

B (2:45 – 4:00)

Shenandoah, Marshall Hall

Ecological Regions and Natural Communities of Virginia

Moderator: The Honorable Doug Domenech, Secretary of Natural Resources

Presenter: Gary Fleming, Vegetation Ecologist, DCR

From the Atlantic coast to the spruce-fir forests at more than 5,700 feet elevation on Mount Rogers, the landscape of Virginia encompasses an extraordinary range of landforms, topography, and biological habitats. "The Ecological Regions and Natural Communities of Virginia," will explore the large-scale environmental and biotic gradients that influence Virginia, and present an overview of the natural features and communities in each of the five physiographic provinces that intersect the state. The status of natural area protection in these regions, as well as some of the management issues that natural area land managers deal with regularly, will also be addressed.

C (4:15 – 5:30)

Shenandoah, Marshall Hall

The *Flora of Virginia*: A Modern Manual to All Native and Naturalized Plants of the Commonwealth

Moderator: Gerald P. McCarthy, Executive Director, Virginia Environmental Endowment

Presenter: Chris Ludwig, Chief Biologist, DCR-Natural Heritage Division and co-author, *Flora of Virginia*

Work to complete the 2012 *Flora of Virginia* began when the foundation for the Flora of Virginia was established in 2001. This talk will chronicle the manual's development as well as provide the audience with an author's guide to using the 1554-page book. If time allows, we will talk about future projects for the Virginia Flora Foundation. If you have one, bring your copy of the manual.

Wednesday, 10 April

D and E (9:45 – 12:00)

Marshall Hall Parking Lot – Shuttle Stop

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A Walk to the River—Local Flora (Field Trip)

Guides:

- Chris Ludwig, Chief Biologist, DCR-Natural Heritage Division and co-author, *Flora of Virginia*
- Gary Fleming, Vegetation Ecologist, DCR
- Peggy Dyson-Cobb, Virginia Master Naturalist and Virginia Native Plant Society
- Philip Coulling, Executive Director, Nature Camp, Vesuvius
- Laura Neale, Chair of Board, Wilderness of Virginia

Virginia Military Institute and Washington & Lee University share adjacent back campuses with trails that wind back and forth down to the Maury River. This area features a combination of rich, moist bottomland and drier north-facing hillside. A tall mostly deciduous canopy provides an array of microclimates in which a substantial number of wildflower species thrive. Early-flowering species include hepatica, bloodroot, spring beauty, toothwort, and twinleaf. Later blooming treasures include jack-in-the-pulpit, trout lily, blue and black cohosh, geranium, phlox, may apple, Solomon's seal, bellwort, golden alexander, and more. We'll be sure to share one of the most remarkable expanses of jeffersonia that you're ever likely to see.

G (3:30 – 4:45)

2nd Floor Board Room, Moody Hall

Ecology and Collaboration

Moderator: Robert Humston, Ph. D., Associate Professor, Biology, Washington & Lee University

- Working Together for Climate, Environment, and Readiness in VA: CLEAR Action Plan*—Rebecca Rubin, President, Marstel-Day, LLC
- Saving Pleasure House Point: A Success Story in Urban Land Conservation*—Chris Moore, Hampton Roads Senior Scientist, Chesapeake Bay Foundation
- Connecting Bay Bottom to Coastal Policy Decisions*—David Jasinski, President, Chesapeake Environmental Communication and Mark Bryer, Chesapeake Bay Program Director, The Nature Conservancy
- Sediment Restoration Involving a Combination of Dredging, Capping and Wetland Creation at Money Point in Chesapeake, Virginia*—Jack Moore, Program Manager, AECOM Technical Services, Inc.

Thursday, 11 April

H (8:30 – 9:30)

Turman Room, Preston Library

Flora of Virginia

Moderator: Colonel Keith Gibson, Director, VMI Museum System

Presenter: Richard Cheatham, Independent Scholar, Journalist and Historical Interpreter, Living History Associates

Learn about the creation of *Flora Virginica* as Richard Cheatham portrays John Clayton, who played an instrumental role in its creation. Hear reflections on becoming John Clayton and the *Flora of Virginia*.

I (9:45 – 10:45)

Turman Room, Preston Library

Lidar Mapping and Living Shorelines

Moderator: John Pickelhaupt, Managing Engineer, O'Brien & Gere

- Sea level rise and adaptation strategies for Tidewater Virginia—Molly Mitchell, Marine Scientist Supervisor, Virginia Institute of Marine Science
- Meeting the Need for High Quality Elevation and Terrain Data in Virginia—John Scrivani, Geospatial Projects Manager, Virginia Information Technologies Agency

*Paper Presentation - (S) Speed Presentation

Energy Development—Track 7

Tuesday, 9 April

C (4:15 – 5:30)

Turman Room, Preston Library

Energy and Water Quality Paper Session

Moderator: Dr. Tamim Younos, President, Cabell Brand Center

- Design of a Two Phase Energy System*—Jacquelyn Nagel, Ph.D., Assistant Professor, Engineering, and Ben Condro, Student, James Madison University
- (S)Assessment of Natural Gas mining on Water Quality in the Chesapeake Bay Region*—Hillary Benedict, Project Manager and Matthew Wisniewski, Student, James Madison University
- Evolution of Site Conceptual Models at Free Product Remediation Sites in VA*—Matt Richardson, Geologist, Environmental Alliance, Inc.
- (S) The Effect of Plant Microbial Fuel Cell Operation on the in situ Growth of Plant*—Vincent Zampelli, Student, and Chris Diacheck, Student, James Madison University

Wednesday, 10 April

D and E (9:45 – 11:45)

Turman Room, Preston Library

Synthesizing Lessons-learned for Future Decision-making – Uranium Mining/Milling Evaluation Experience in Virginia

This is not a debate about uranium mining/milling, or a debate at all. It is an opportunity to capture lessons learned from last several years considering uranium mining in Virginia; such as acceptable levels of risk, gaps in science, and more. Finally, how do we synthesize results from a variety of research areas to make informed decisions?

Moderator: Major Howard Sanborn, Ph.D., Assistant Professor of International studies and Political Science, Virginia Military Institute

- Uranium Mining Working Group and Status of Uranium Mining/Milling in Virginia
 - Rick Weeks, Deputy Director, Virginia Department of Environmental Quality
- Big Picture Lessons learned – Uranium Evaluation Experience
 - Paul A. Locke, JD, MPH, DrPH, Associate Professor, Director, DrPH Program in Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health
 - Katie Whitehead, Citizen, Pittsylvania County
 - Thomas Leahy, Director of Public Utilities, City of Virginia Beach
 - Nathan Lott, Executive Director, Virginia Conservation Network

F (12:45 – 2:00)

Shenandoah Room, Marshall Hall

Virginia's Pursuit of Off-Shore Wind

Moderator: Rick Weeks, DEQ

- *Poseidon Atlantic : Engineering Milestones and Challenges* -Sally McNeilan, Business Development Manager, Fugro Atlantic
- Guy Chapman, Director of Renewable Energy Research and Program Development, Dominion
- Cathie France, Deputy Director, VA Department of Mines, Minerals and Energy

G (3:30 – 4:45)

Turman Room, Preston Library

Potential Impacts of Hydraulic Fracturing on Water Resources and George Washington National Forest

Moderator: Benjamin Koopferstock, Student, Washington & Lee University School of Law - *Journal of Energy, Climate, & the Environment*

- Greg Kozera, President, Virginia Oil and Gas Association
- Gary Eide, Inspector, Division of Gas and Oil, VA Department of Mines, Minerals, and Energy

www.vmi.edu/environmentva

- Representative, Trout Unlimited (invited)

Thursday, 11 April

H and I (8:30 – 10:45)

Shenandoah, Marshall Hall

Geothermal Heating and Energy Conservation

Moderator: Dr. Tamim Younos, President, Cabell Brand Center

- Marilyn Maisano, Ph.D. and James Savage
- Michael Rakes, P.E., LEED AP, Principal, and David Feron, P.E., Mechanical Engineer, Spectrum Design
- Thom Drunagel and Gregg Drunagel, Green Hill Mechanical, LLC
- Representative, Roanoke County Schools (*to be invited*)

*Paper Presentation - (S) Speed Presentation

Envisioning Our Future—Track 8

What issues, if not addressed in the near future, will be of greatest concern to you and your constituency in the next 30-50 years?

The focus of these sessions is to seek your answers to that question. DEQ's mission, when the agency was formed 20 years ago, included long-term planning. Policy leaders will convene the following discussions where your comments will be heard and noted. In addition to attending these sessions, you may register your ideas by completing an online survey during the Environment Virginia Symposium. The final component will be presentations and discussion on seeking regulations that attain great environmental results more efficiently. Symposium Reporters include: Tammy D. Stephenson, Program Coordinator, Office of Water Supply, and Kathryn Humphrey, Washington & Lee University, School of Law, J.D. Candidate 2014

Tuesday, 9 April

A (9:30 – 11:30)

Activities Room, Moody Hall

Envisioning: Energy Supply

Convened by: Maureen Matsen, Deputy Sec. of Natural Resources & Governor's Chief Energy Advisor; and Michael Dowd, DEQ Air Division Director

Discussion topics include: siting of energy infrastructure, energy diversity (traditional & renewable), reliability of commercial grid, market-price effects of specific energy sources on totality of energy planning, energy efficiency

B (2:45 – 4:00)

Activities Room, Moody Hall

Envisioning: Water Quality/Nonpoint

Convened by: James Golden, DEQ Deputy Director, James Davis-Martin, DCR, and Darrell Marshall, VDACS

Discussion topics include: appropriate balance between point and nonpoint sources in TMDL implementation, new industries and wastewater treatment plants, alternatives to land application of wastes, impacts on recreational and commercial fisheries, emerging contaminants, cost of BMPs, point source/nonpoint source trading, land conservation practices that improve water quality

C (4:15 – 5:30)

Activities Room, Moody Hall

Envisioning: Water Supply

Convened by: Melanie Davenport, DEQ Water Division Director; and The Hon. John W. Daniel II, Williams Mullen & Former Secretary of Natural Resources

Discussion Topics to Include: sufficient water for drinking, cooling industrial processes, recreation, protection of aquatic species; banking raw water; ensuring quality and quantity of private well water; salt water intrusion; statewide groundwater and surface water management areas

Wednesday, 10 April

D (9:45 – 11:00)

Activities Room, Moody Hall

Envisioning: Societal Growth I—Redevelopment, Waste, and Aging Infrastructure

Convened by: Jeffery Steers, DEQ Land Protection Division Director, Harry Gregori, Waste Associates, LLC, and Steve Yob, Henrico County

Discussion topics include: Land redevelopment; brownfields; managing waste streams; aging infrastructure, including electric grid, dams, roads, bridges, sewer systems

E (11:15 – 12:30)

Activities Room, Moody Hall

Envisioning: Societal Growth II—Air & Water Impacts, Planning, and Land Conservation

Convened by: Amy Owens, DEQ Regional Director and

The Hon. L. Preston Bryant, Jr., McGuireWoods Consulting LLC & Former Secretary of Natural Resources

Discussion topics include: Impacts on air & water quality; loss of critical habitat, farms, forests, and natural areas; impacts on agricultural, fisheries, forestry and tourism industries; plans for growth corridors; energy efficiency; additional uses of coastal waters, ocean and ports

F (12:45 – 2:00)

Activities Room, Moody Hall

Envisioning: Climate Trends

Convened by: Colonel Paul B. Olsen, U.S. Army Corps of Engineers, Norfolk District; and Jefferson Reynolds, DEQ Enforcement Division Director

Discussion topics include: sea level rise, future construction in low-lying coastal areas, loss of wetlands, adapting to severe weather events, greenhouse gas emissions, impacts on agriculture, tourism, construction industry, insurance companies, seafood industry & other economic sectors

G (3:30 – 4:45)

Activities Room, Moody Hall

Next Generation Regulatory Framework - “Breaking the Log-Jam”

Moderator: David Paylor, DEQ Director

- William F. Pedersen, Of Counsel, Perkins Coie LLP
- Jonathan Z. Cannon, Blaine T. Phillips Distinguished Professor of Environmental Law, UVA School of Law

Thursday, 11 April

H and I (8:30 – 10:45)

Activities Room, Moody Hall

Next Generation Regulatory Framework in Virginia

Moderator: Tim Hayes, Hunton & Williams

- The Honorable Matt Lohr, Commissioner of Agriculture, Commonwealth of Virginia
- Kay Slaughter, Former Mayor, City of Charlottesville
- Brooks M. Smith, Partner, Hunton & Williams LLP
- Mary Ann Saunders, Deputy City Manager, City of Chesapeake

12:15 – 1:30 pm

Closing Luncheon— Results of electronic survey and discussion sessions