



Howard County Legacy Leadership
Institute for the Environment
HoLLIE

1st Class, Thursday, February 7, 2019, 8:45 am – 4:00 pm
Carriage House at Belmont Manor and Historic Park, Elkridge

Introduction to Environmental Learning and Leadership

1. **Gather for coffee and announcements** (8:45 – 9:00)
2. **Introduction to Environmental Learning and Leadership** (9:00 – 9:15)

HoLLIE Coordinators:

Cathy Hudson, cmhudson@comcast.net
Tracey Manning, tmanning@umd.edu
Wanda Prather, wprather42@gmail.com
Kim Rutter, egankk@me.com
Barb Schmeckpeper, holliebjs@gmail.com
Betsy Singer, betsysing@gmail.com
Audrey Suhr, asuhr@comcast.net

3. **Brief Introductions** (9:15 – 9:30)
Participants

4. **What Legacy Leadership Means – and Can Mean – to You.** (9:30 – 11:00)
Tracey Manning, Ph.D., Adjunct Professor, Health Services Administration, University of Maryland, College Park (UMCP); tmanning@umd.edu

Speaker objectives:

- Give the back-story of Howard County Legacy Leadership Institute history and outcomes.
- Apply neuroscience of learning and unlearning to institute experience.
- Surface each participant's environmental concern and/or interest and goals for the institute.
- Relate individual interests to non-positional leadership and civic engagement.

As a result, participants will be able to:

- Explain what “leadership” and “legacy” means in the context of a Legacy Leadership Institute.

- Identify environmental interests within the class.
- Maximize brain-based learning through institute participation.
- Explore ways of acting on behalf of the environment with non-positional leadership.

Break (11:00 – 11:15)

5. Faces of Howard County Environmentalists I: The HoLLIE Volunteer Experience (11:15 – 11:35)

Woody Merkle, (2009) and Megan Mills (2018), Graduates of Howard County Legacy Leadership Institute for the Environment (HoLLIE)

Speakers' objectives:

- Legacy Leaders from prior years will introduce themselves to HoLLIE class.
- Leaders will share information on their experiences.

As a result, participants will:

- Begin thinking about their own engagement in environmental activities.
- Appreciate the potential applications and opportunities because of the HoLLIE course.

6. Introduction to HoLLIE website (11:35 – 11:45)

Wanda Prather, HoLLIE Coordinator and Webmaster, wprather42@gmail.com

Speaker objectives:

- Describe features of HoLLIE website (<https://www.howardllie.com/>):
 - HoLLIE course syllabus and reference material.
 - Find reference material about local environmental opportunities.
 - Discuss snow policy.

As a result, participants will be able to explain:

- How to find information about classes and snow policy on HoLLIE website.

Lunch (11:45 – 12:15)

7. Meet Your Fellow Classmates: Tell Your Story (12:15 – 1:45)

2019 Class Members and HoLLIE Coordinators

Speakers' objectives:

- Explain objectives of story-telling.
- Class Members and Coordinators will tell their stories (5 min each).

As a result, participants will be able to describe:

- Who (name) their fellow classmates are.
- Something about them that led them to HoLLIE today.

Break (1:45 – 2:00)

8. Environmental Initiatives of Howard County Department of Recreation and Parks
(2:00 - 3:00)

John S. Marshall, Chief, Bureau of Parks and Program Services;
jmarshall@howardcountymd.gov

Speaker's objectives:

- Introduce participants to Howard County Department of Recreation and Parks.
- Describe what the DRP is doing to protect the local environment.
- Describe some of the environmental issues facing our community.
- Describe the challenges our community faces in reaching our environmental goals.

As a result, participants will be able to explain:

- How the Howard County DRP manages its environmental responsibilities.
- How citizens can assist in reaching shared environmental goals.

Q & A (3:00 – 3:15)

9. Upcoming Classes, Expectations and Evaluations (3:15 – 4:00)
HoLLIE Coordinators

Speaker objectives:

- Describe HoLLIE course syllabus and snow policy
- Assign Ned Tillman's book *Saving the Places We Love: Paths to Environmental Stewardship* to read for discussion during Class 6 (March 14).
- Develop class norms.
- Organize snack contributions.
- Organize carpools for NASA and collect required information for entry.
- Collect class daily evaluations.

As a result, participants will be able to explain:

- Assignment for Class 6 (March 14).
- Class norms and snack contributions.
- How they will get to NASA.



Howard County Legacy Leadership
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2nd Class, Thursday, February 14, 2019, 8:30 am – 4:00 pm

Building 33, Room H114, NASA's Goddard Space Flight Center (GSFC),
Greenbelt

What Informed Citizens Need to Know about Earth Systems Science

Understanding the Tools and the State of Art in Earth Science

1. **Observing the Earth System through the Eyes of Satellites** (8:30 - 9:30)

Claire Parkinson, Ph.D., Climate Change Senior Scientist, NASA's Goddard Space Flight Center (GSFC); claire.l.parkinson@nasa.gov

Speaker Objectives:

- Provide an overview of Earth observations from satellites.
- Discuss how important features and components of the Earth system are being observed from space:
 - Earth's energy balance;
 - Stratospheric ozone and the ozone hole;
 - Volcanic emissions;
 - Atmospheric water vapor;
 - Hurricanes, fires, dust storms;
 - Earth's ice cover;
 - Ocean features such as sea level, sea surface temperature, and coccolithophore blooms;
 - Deforestation and other human impacts.

As a result of the presentation and follow-on discussions, participants will:

- Understand the basics of satellite sensing of the Earth system.
- Appreciate the wide range of phenomena that can be observed from space.

Q & A (9:30 – 9:45)

Break (9:45 – 10:00)

2. **Carbon Cycle** (10:00 – 11:00)

Forrest Hall, Ph.D., Principal Investigator (Retired), Office for Global Carbon Studies,
NASA's GSFC and UMBC; hallbosque@gmail.com
Adjunct Faculty, Maryland Institute College of Art; fhall@mica.edu

Speaker objectives:

- With an integrated system perspective, use examples drawn from past and current carbon cycle research to:
 - Explain the basic underlying science and interactions of the carbon cycle: i.e., that carbon dioxide moves from the atmosphere into living organisms (biosphere), or into the soil (geosphere) or into our water (hydrosphere) before moving back into the atmosphere.
 - Discuss issues and challenges resulting from changes to the carbon cycle (i.e., global warming).
 - Illustrate the state of art in Earth observing technologies and strategies for environmental monitoring, assessment and prediction of changes in the carbon cycle.
 - Consider how industry, government, academia and individuals can collaborate.

As a result of the presentation and follow-on discussions, participants will:

- Understand fundamental carbon cycle components and interactions.
- Understand some of the major advances and challenges in carbon cycle research, and their relevance to detecting, understanding and predicting environmental changes on regional to global scales (i.e., global warming).
- Better appreciate the importance of satellite observing and Earth system computer models to environmental prediction and response.
- Better understand the roles of industry, government, academia and you in mitigating the consequences of climate change.

Q & A (11:00 – 11:15)

3. Visit to Mission Operations (11:15 – 12:30)

William Guit, M.S., Aqua Mission Director, NASA's GSFC; william.j.guit@nasa.gov

Warren Case, Columbus Technologies Inc, / NASA

Mike Machado, NASA Mission Validation & Operations Branch

Speaker Objectives:

- Discuss work of Mission Operations:
 - In planning mission,
 - In controlling spaceflight,
 - In acquiring data,

As a result of the presentation and follow-on discussions, participants will

- Appreciate the complexity of planning missions and acquiring data from satellites.

Lunch (12:30 – 1:30)

4. Climate Change & Forty Years of Sea Ice Studies (1:30 – 2:30)

Claire Parkinson, Ph.D., Climate Change Senior Scientist, NASA's GSFC;

claire.l.parkinson@nasa.gov

Speaker Objectives:

- Provide a brief overview of climate change and its many causes.

- Illustrate how satellite data are contributing to the information on climate change.
- Describe NASA sea ice research since the 1970s.
- Show the changes in Arctic and Antarctic sea ice since the 1970s, as revealed by satellite data.

As a result of the presentation and follow-on discussions, participants will:

- Understand that climate change has been taking place since the Earth formed, with many diverse causes, and that human activities are now prominent contributors.
- Appreciate the important information that satellite observations are contributing to quantifying current climate change.
- Understand the importance of sea ice in the global system.
- Realize that the Earth's sea ice cover has changed significantly over the past four decades, in line with other climate changes.

Q & A (2:30 – 2:45)

Understanding the Science of Earth's Cycles

5. **Observing the Living Oceans from Space (2:45 - 3:45)**

Ivona Cetinic Ph.D., Scientist, Universities Space Research Association, NASA's GSFC;
ivona.cetinic@nasa.gov

Speaker objectives:

- With an integrated system perspective, examples are drawn from current ocean research.
- The applications of satellite-derived ocean color data range from providing the information needed for a more accurate assessment of the role of the ocean in global change to providing a key parameter in a number of ecological and environmental studies.
- The color images of the Earth's changing land and ocean features will be of significant use in fisheries management, agriculture assessment and coastal zone monitoring.
- There is no question that the Earth is changing. Ocean color measurements from space have enabled us for the first time to monitor the biological consequences of that change - to see how the things we do, and how natural variability, affect the Earth's ability to support life.
- What can be learned about Chesapeake Bay from such imagery?

As a result of the presentation and follow-on discussions, participants will:

- Understand fundamental interactions and components in ocean dynamics and biology.
- Understand some of the major advances and challenges in ocean dynamics and biology, and their relevance to detecting, understanding and predicting environmental changes on regional (e.g., Chesapeake Bay) to global scales.
- Have a better appreciation for the importance of satellite observing and Earth system computer models to environmental prediction and response.

Q & A (3:45 – 4:00)



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3th Class, Thursday, February 21, 2019, 8:30 am – 3:30 pm, Building 33, Room H114, NASA's GSFC, Greenbelt

What Informed Citizens Need to Know about Earth Systems Science

Understanding the Science of Earth's Cycles, *cont.*

1. Ice Sheets: Understanding Change in the Polar Regions (8:30 – 9:30)

Kelly M. Brunt, Ph.D., Associate Research Scientist, Earth System Science Interdisciplinary Center (ESSIC), University of Maryland and NASA Cryospheric Sciences Laboratory at NASA's GSFC; kelly.m.brun@nasa.gov

Speaker objectives:

- From a perspective of satellite (ICESat and ICESat-2) and aircraft observations (IceBridge):
 - Explain how ice sheets change.
 - Show how we measure and study that change.
 - Show that recent changes of ice sheets are surprisingly large.
 - Discuss what change is significant.
 - Illustrate what the future ice sheets might do.

As a result of the presentation and follow-on discussions, participants will:

- Understand processes that drive both slow and rapid ice-sheet response to environmental changes.
- Appreciate the relevance of ice-sheet change.
- Appreciate the importance of satellite observation and Earth system computer models to environmental prediction and response.

Q & A (9:30 – 9:45)

Break (9:45 – 10:00)

2. **Land-based Hydrological Cycle.** (10:00 – 11:00)

Matthew Rodell, Ph.D., Chief, Hydrological Sciences Laboratory; NASA's GSFC;
matthew.rodell@NASA.gov

Speaker objectives:

- With an integrated system perspective, use examples drawn from current research in the field of hydrology to
 - Explain the basic underlying science and interactions.
 - Discuss outstanding issues and challenges (e.g., data gaps, groundwater depletion, etc.).
 - Illustrate the state of art in earth observing technologies and strategies for environmental monitoring, assessment and prediction.

As a result of the presentation and follow-on discussions, participants will:

- Understand fundamental hydrological cycle components and interactions.
- Understand some of the major advances and challenges in hydrological sciences, and their relevance to detecting, understanding and predicting environmental changes on regional to global scales.
- Have a better appreciation for the importance of satellite observing and Earth system computer models to environmental prediction and response.

Q & A (11:00 – 11:15)

3. **The World of the Nonprofit and Why I Volunteer** (11:15 – 12:00)

Cathy Hudson, “professional volunteer”, cmhudson@comcast.net

Speaker objectives:

- Highlight key differences in non-profit organizational structure, processes, regulations, and mission and purview from those of for-profits.
- Highlight several levels of nonprofit groups.
- Describe advantages of working in the nonprofit arena.
- Explore how to view your use of time to avoid burnout.

As a result, participants will be able to explain:

- How the for-profit world differs from the non-profit world.

Lunch (12:00 – 12:30)

4. **How the Montreal Protocol Saved the Earth's Ozone Layer** (12:30 – 1:30)

Paul A. Newman, Ph.D., Senior Scientist, Chief Scientist for Atmospheric Sciences, Earth Sciences Division at NASA's GSFC; paul.a.newman@nasa.gov

Speaker objectives:

- When the production of human-produced long-lived chlorine and bromine compounds threatened the Earth's ozone layer, the Montreal Protocol was negotiated to solve this problem. This presentation will:
 - Explain the basic underlying science and interactions of ozone and how human-produced chlorofluorocarbons (CFCs) impacted our ozone layer.

- Discuss outstanding issues and challenges on ozone and climate (e.g., reports on atmospheric ozone by Scientific Assessment Panel to Montreal Protocol),
- Illustrate the state of art in Earth observing technologies and strategies for atmospheric monitoring, assessment, and prediction.
- Describe how these technologies and strategies lead to continual updates on the stratospheric ozone layer and continue to inform policy makers.

As a result of the presentation and follow-on discussions, participants will:

- Understand fundamental atmospheric ozone components and interactions.
- Understand some of the major advances and challenges in ozone science, and their relevance to detecting, understanding, and projecting environmental changes.
- Have a better appreciation for the importance of satellite observation and Earth system computer models to environmental prediction and response.

Q & A (1:30 – 1:45)

Break and travel by cars to Lab (1:45 – 2:15)

From Satellite Data to Computer Models

5. Site Visit to GSFC Scientific Visualization Studio and Remote Sensing Labs

(2:15 – 3:15)

Horace Mitchell, Ph.D., Director, Scientific Visualization Studio at NASA's GSFC;

Horace.G.Mitchell@NASA.gov

Speaker objectives:

- Illustrate how environmental observations are locally and globally acquired, processed, analyzed and integrated with computer models.
- Illustrate how large-scale environmental observations are visualized in ways that enable new scientific insights.

As a result, participants will:

- Gain an appreciation of how understanding complex environmental phenomena is being advanced through combined use of satellite remote sensing and computer models.

Q & A (3:15 – 3:30)



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4th Class, Thursday, February 28, 2019, 8:45 am – 4:00 pm
Carriage House at Belmont Manor and Historic Park, ElkrIDGE

Earth System Science with Humans in the Equation

1. **Gather for coffee and announcements** (8:45 – 9:00)

2. **International and National Environmental Policies** (9:00– 10:00)

Tim Lattimer, Coordinator of the U.S. Delegation to the U.N. Climate Change Conference (COP21), US Department of State (Retired); lattimertp@gmail.com

Speaker objectives:

- Discuss how observed and modeled environmental changes impel decision-making and policy from international to local perspectives.
- Give an overview of international and national policies on climate change.
- Discuss impact of US withdrawal from Paris Agreement.
- Give perspective to 2018 IPCC report.

As a result, participants will be able to explain, in laymen's terms:

- The basics of international and national policies on climate change, including the key global treaties.

Q & A (10:00 – 10:15)

Break (10:15 – 10:30)

3. **Chesapeake Bay, Climate Change, and the Politics of Finance** (10:30 – 11:30)

Daniel Nees, Senior Research Associate, with a joint appointment with the Environmental Finance Center (EFC) in the School of Architecture, Planning and Preservation and the Center for Global Sustainability in the School of Public Policy, University of Maryland, College Park; Dnees@umd.edu

Speaker objectives:

- Explain the impact of climate change on Bay restoration financing.
- Discuss the opportunities that climate change creates for more efficient financing.
- Describe and discuss the policy and regulatory changes that will be necessary to finance Bay restoration in response to a changing climate.

As a result, participants will be able to explain, in layman's terms:

- The impact of climate change on the cost of Bay restoration
- Types of change needed to finance Bay restoration.

Q & A (11:30 – 11:45)

Lunch (11:45 – 12:15)

Making a Difference, Together

4. **How We Change Minds, Hearts, and Behavior – and Why It's Not Easy.** (12:15 – 1:30)

Tracey Manning, Ph.D., Adjunct Professor, Health Services Administration, UMCP;

tmanning@umd.edu

Speaker objectives:

- Explore the challenge of change, based on neural and cognitive processes.
- Address hindrances to effective environmental dialogue.
- Identify influences on environmental attitudes and actions.
- Discover productive ways to share environmental information with people of diverse beliefs/knowledge.

As a result, participants will be able to explain:

- Why typical approaches to environmental discussion across attitude/belief divides usually founder.
- Practical skills and strategies that an individual can employ to foster constructive environmental dialogue.
- Steps they can take within their “spheres of influence” to find common ground and a way forward.

Break (1:30 – 1:45)

5. **Faces of Howard County Environmentalists II: HoLLIE Partners** (1:45 – 4:00)

HoLLIE Partners (each Partner will give a 15 min. talk)

Howard County Watershed Stewards Academy (WSA), University of Maryland

Extension-Howard County, <http://www.howardwsa.org>

Terry Matthews, tmatt@umd.edu

HoCo Climate Action (HoCoCA), <http://www.hococlimateaction.org/>

Charles Goedeke, tooldude@me.com

Howard County Public School System (HCPSS), Elementary Science, www.hcpss.org/

Amy Reese, amy_reese@hcpss.org and

Jennifer Brown-Whale, jennifer_brown-whale@hcpss.org

Patapsco Heritage Greenway (PHG), <https://patapsco.org>

Hannah Zinnert, hzinnert@patapsco.org

Transition Howard County (THC), www.transitionhoco.org
Margo Duesterhaus, margo@tripleeq.com

University of Maryland Extension: Master Gardeners (MG)
<https://extension.umd.edu/mg/locations/howard-county-master-gardeners>
Georgia Eacker, geacker@umd.edu,

Howard County Conservancy (HC Conservancy), <https://www.hcconservancy.org>
Kylie Watson, kylie.watson@hcconservancy.org

University of Maryland Extension: Master Naturalists (MN)
<https://extension.umd.edu/masternaturalist>
Wanda MacLachlan, wtm@umd.edu

Robinson Nature Center (RNC), <https://www.howardcountymd.gov/Robinson>
Brian Campbell, bcampbell@howardcountymd.gov
Pamela Reese, pareese@howardcountymd.gov

Objectives for each speaker:

- Introduce the organization; describe its mission and environmental role in Howard County.
- Give the participants a good sense of how your organization operates and who or what receives your services or products.
- Indicate how citizens can volunteer in your organization

As a result, participants will be able to explain:

- Who the Howard County HoLLIE partners are.
- What they do for the environment.
- Areas they might be interested in working with any of these organizations.

After the talks, there will be wine and cheese and a chance to mingle with HoLLIE Partners, to find out more about volunteer opportunities you might enjoy.



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5th Class, Thursday, March 7, 2019, 8:45 am – 4:00 pm
Carriage House at Belmont Manor and Historic Park, Elkridge

Earth System Science with Humans in the Equation, cont.

1. **Gather for coffee and announcements** (8:45 – 9:00)
2. **Pollution Affects People - Why Protecting the Environment is Really About Protecting Our Own Health** (9:00 – 10:00)
Tamara Toles O’Laughlin, Executive Director, Maryland Environmental Health Network;
Tamara@MdEHN.org

Speaker objectives:

- Describe the relationship between human health and the environment.
- Illustrate how current local and regional practices impact the health of vulnerable populations such as children or the elderly, low income communities, and communities of color.
- Describe current policy discussions that address adverse impacts on human health, including energy policy, storm water, food systems policy, and restrictions on toxic chemicals and pesticides.
- Discuss the false conflict between the economy and the environment by addressing the hidden costs of pollution and exposures to toxics (e.g., loss of worker productivity, threats to children's cognitive development, costs of diseases such as asthma and heart disease). Describe how pollution is implicated in these situations.

As a result of this presentation and follow-on discussion, participants will understand:

- How health arguments can help us build the political will to address climate change and protect our environment.
- The major pathways and current threats to health, due to air pollution, water contamination, certain industrial practices, energy policy, and toxics policy.
- Actions they can take to influence the public, and policy-makers, to demand and support clean water and air to benefit our health.

Q & A (10:00 – 10:15)

Break (10:15 – 10:30)

3. **From City Lights to Climate Change** (10:30– 11:30)

Miguel O. Román, PhD., Director, Earth from Space Institute, Universities Space Research Association, Columbia, MD 21046; mroman@usra.edu

Speaker objectives:

- Describe the variety and development of global land products monitored, including NASA's Black Marble suite of products.
- Illustrate how observations of night-time skies can help us understand our use of energy and inform citizens and public policy makers.
- Discuss other land measurements, e.g., phenology, and implications for biological changes as our planet warms.
- Discuss real-time use of satellite data for other needs, e.g., disaster relief or regulation of fishing.

As a result of the presentation and follow-on discussions, participants will

- Gain an appreciation for what we are learning by using these Earth observatories.
- Appreciate the significance of using satellite data for policy discussions, planning and decisions.

Q & A (11:30 – 11:45)

Lunch (11:45 – 12:15)

Making a Difference, Together

4. **From Sustainable to Regenerative: “I’m Convinced, Now What Can I Do?”** (1:00–2:00)

Cathy Hudson, community advocate, farmer, cmhudson@comcast.net

Speaker objectives:

- Look at ways that we contribute to the problems.
- Discuss ways an individual might move toward sustainable living.
- What role might regenerative agriculture play?

As a result, participants will be able to explain:

- Why the concept of sustainability is important for society.
- How decisions by individuals contribute to sustainability.
- Where to best start in making strategic changes.

Break (2:00 – 2:15)

5. **Effective Environmental Advocacy** (2:15 – 4:00)

Joshua D. Feldmark, Resource Evolution; josh.feldmark@gmail.com

Speaker objectives:

- Describe how to be an effective advocate for the environment in a variety of situations.
- Illustrate, by example, the use of such skills.

As a result, participants will be able to explain:

- How to be an effective advocate for the environment to a variety of audiences.



Howard County Legacy Leadership
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6th Class, Thursday, March 14, 2019, 8:45 am – 4:00 pm
Carriage House at Belmont Manor and Historic Park, Elkridge

Howard County's Environmental Status I: County Government

1. **Gather for coffee and announcements** (8:45 – 9:00)
2. **County Government and the Environment** (9:00 – 12:15)

Speakers' collective objectives:

- Introduce participants to County Offices, Departments, Bureaus and Divisions that work on environmental issues.
- Describe what the county government is doing to protect the environment.
- Describe the challenges the county government faces in reaching its environmental goals.

As a result, participants will be able to explain:

- How the Howard County government manages its environmental responsibilities.
 - How the departments or offices responsible for these functions achieve their goals.
- a. Office of Community Sustainability (9:00 – 10:00)
Lindsay DeMarzo, Howard County Office of Community Sustainability;
LDemarzo@howardcountymd.gov
 - b. Department of Planning and Zoning (10:00 – 11:00)
Beth Burgess, Chief, Division of Resource Conservation;
bburgess@howardcountymd.gov

Break (11:00 – 11:15)

- c. Department of Public Works (11:15 – 12:15)
Mark DeLuca, Deputy Director, Department of Public Works and Chief, Bureau of Environmental Services; mdeluca@howardcountymd.gov

Lunch (12:15 – 12:45)

Howard County's Environmental Status II: Local Initiatives

3. “Saving the Places We Love” (12:45 – 1:45)

Ned Tillman, Author of *The Chesapeake Watershed*; *Saving the Places We Love: Paths to Environmental Stewardship* and *The Big MELT*, Sustainability Advisor, and leader of nature walks for organizations; ned@sustainable.us

Speaker objectives:

- Discuss past and present human impacts on our local ecosystems and environment.
- Discuss strategies for getting back into balance with nature.

As a result, participants will:

- Gain insight into actions that will restore and preserve our local ecosystems and our environment.
- Begin to chart a course as an environmental steward.

Q & A (1:45 – 2:00)

4. Field Trip along the Patapsco River (2:00 – 4:00) with Ned Tillman

Speaker objectives:

- Illustrate how to “read the land.”

As a result, participants will be able to explain

- How geologic events shaped our county.
- Our impacts on our ecosystem and our environment.



Howard County Legacy Leadership
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7th Class, Thursday, March 21, 2019, 8:45 am –4:00 pm
Carriage House at Belmont Manor and Historic Park, Elkridge

Chesapeake Bay Watershed

1. **Gather for coffee and announcements** (8:45 – 9:00)

2. **Status 2019: Restoring the Chesapeake Bay** (9:00 – 9:50)

Anna Mudd, Maryland Grassroots Manager, Chesapeake Bay Foundation; amudd@cbf.org

Speaker objectives:

- Review key points in the history of Chesapeake Bay environmental decline.
- Review latest Report Card and highlight actions needed to restore Bay health.
- Discuss the current USEPA emphasis on Total Maximum Daily Loads (TMDLs) and how this emphasis might impact Maryland citizens.
- Discuss actions that citizens can take to “Save the Bay.”

As a result, participants will be able to explain:

- Current issues affecting the environmental health of the Bay.
- What is meant by the “diet for the Bay” and how this might affect Marylanders.
- What individuals can do to “Save the Bay.”

Q & A (9:50 – 10:05)

3. **Improving Water Quality through Land Conservation and Stewardship in the Chesapeake Watershed** (10:05 – 10:30)

Jennifer Herzog, Chesapeake Program Manager, Land Trust Alliance; jmillerherzog@lta.org

Speaker objectives:

- Introduce the new Chesapeake Bay Land and Water Initiative.
- Discuss opportunities to protect and enhance water quality through land conservation and stewardship.
- Share examples of new projects that reduce pollution and improve water quality on protected land.

As a result, participants will be able to explain:

- Why land conservation is important for water quality, as well as other values.
- How land conservation organizations and landowners can make a greater contribution to improving water quality.

- How individuals can support land conservation.

Break (10:30– 10:45)

Howard County's Environmental Status III: Watershed Issues

4. **Patuxent River** (10:45 – 11:45)

Fred Tutman, Patuxent River Riverkeeper and CEO;

Fred@paxriverkeeper.org

Speaker objective:

- Describe the Patuxent River and its connection to the Chesapeake Bay, through its history (especially human activities), water quality, biodiversity and restoration efforts.

As a result, participants will be able to explain:

- The areas that make up the Patuxent River watershed and how the river has changed over time, especially the last 400 years.
- How what people do upstream affects people and natural resources downstream.
- How one or two key restoration efforts could improve the river's water quality.

Q & A (11:45 – 12:00)

Lunch (12:00 – 12:30)

5. **Watersheds Need Protection from Storm Water** (12:30 – 1:30)

John McCoy, Watershed Manager, Columbia Association;

John.McCoy@ColumbiaAssociation.org

Speaker objectives:

- Briefly describe Howard County's watersheds.
- Explore how urbanization and impervious cover affect the watershed.
- Review the water cycle and how humans have changed it.
- Describe storm water issues in Howard County.
- Discuss examples of how small groups or individuals can alleviate these problems, especially on private property.

As a result, participants will be able to explain:

- Why storm water runoff is an environmental problem.
- Some simple actions that individuals and communities can take to reduce storm-water runoff.

Q & A (1:30 – 1:45)

Break (1:45 – 2:00)

6. Field Trip: Howard County Watershed Problems and Solutions (2:00 – 4:00)

John McCoy, Watershed Manager, Columbia Association;

John.McCoy@ColumbiaAssociation.org

Speaker objectives

- Lead participants to several sites that demonstrate solutions for stormwater management (SWM) problems, such as downspout diversions, conservation landscapes and rain gardens.
- Discuss examples of storm water runoff solutions.
- Encourage stewards to look upstream from project.
- Discuss how to encourage residents to work toward better SWM practices on their properties.

As a result, each participant will be able to:

- Discuss solutions to several SWM problems.
- Identify how the soil affects the SWM practice.



Howard County Legacy Leadership
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8th Class, Thursday, March 28, 2019, 8:45 am – 4:00 pm
Carriage House at Belmont Manor and Historic Park, Elkridge

1. **Gather for coffee and announcements** (8:45 – 9:00)

Is the Climate Changing or Is It Just Crazy Weather?

2. **Relationship between Climate and Weather** (9:00 – 10:00)

Emily Becker, Ph.D., Research Scientist, Climate Prediction Center, National Weather Service, NOAA; emily.becker@noaa.gov

Speaker objectives:

- Distinguish weather and climate.
- Describe the link(s) between weather and climate.
- Define climate change and its characteristics.
- Define global warming.
- Discuss long-term trends in extreme weather and climate events.

As a result of this presentation and follow-on discussion, participants will understand:

- The difference between weather and climate.
- The local manifestations of climate change in our own backyards.
- The important long-term trends in the mean temperature and precipitation climates of North America and the globe.
- That the links between trends in green-house gas concentration and trends in weather extremes have not been fully established.
- That credible extrapolation of trends depends on additional research and future model improvements.
- That recent progress in our ability to predict phenomena at the interface between weather and climate has been impressive and is serving as a vital component of Earth system science.

Q & A (10:00 – 10:15)

Break (10:15 – 10:30)

Land Use: Local Agriculture

3. **Agriculture in Howard County** (10:30 – 11:30)

Kathy L. Johnson, Agricultural Development Manager, Howard County Economic Development Authority; KLJohnson@hceda.org

Speaker objectives:

- Present an overview of farming in Howard County, with an emphasis on the status of local food production.
- Describe the County programs to protect farmland.
- Discuss how local farmers are adapting to change in the County, e.g., how they work to maintain their farms in the face of development options.

As a result, participants will:

- Be able to describe the current status of farming in Howard County.
- Know some of the ways the County government protects farmland.
- Understand the importance to the environment of “eating local.”

Q & A (11:30 – 11:45)

Lunch (11:45– 12:15)

Transition and Celebration

4. **Developing and Deploying Your Leadership Strengths to Make a Difference** (12:15 – 1:30)

Tracey Manning, Ph.D., Adjunct Professor, Health Services Administration, UMCP;
tmanning@umd.edu

Speaker objectives:

- Help participants identify and apply their transformational leadership strengths to non-positional leadership for the environment.
- Describe elements of their environmental vision.
- Recognize next steps to utilize their strengths with allies in the service of their vision.

As a result, participants will be able to explain:

- Five key transformational leadership practices and their consequences for individuals and groups.
- Aspects of their environmental vision, a purpose they want to pursue.
- How they could use their transformational leadership strengths to make an environmental difference towards their vision.

5. “What’s Next for HoLLIE Participants?” and Class Feedback (1:30 – 2:30)
HoLLIE Coordinators

Speaker objectives:

- Provide an overview of environmental involvement after HoLLIE
- Elicit feedback from course participants, e.g., what was new, exciting (or not); what should we keep or discard?

As a result, participants will be able to:

- Chart a personal course in environmental awareness and activism

Break (2:30 – 2:45)

4. Travel and Tour of Myrtle Woods Farm, Elkridge (2:45 – 4:00)
Cathy Hudson, Howard County Farmer

Speaker objectives:

- Provide an overview of local sustainable farming practices in the midst of Elkridge.
- Explain why such farms are important for our future.

As a result, participants will be able to describe:

- Advantages of local food sources.
- How to find these resources.