



University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE

Dear Friends,

We are excited to share our 2013 Annual Report and to touch upon some of the many accomplishments achieved by the University of Maryland Center for Environmental Science during the past year.

With research laboratories extending from the Appalachian Mountains to the receiving waters of Solomons Island, the Eastern Shore, and Baltimore, we are working to ensure that Maryland's environment is healthy and abundant. We are also extending our scientific knowledge to address environmental needs across the globe—in Brazil, the Baltic States, Vietnam, Korea, and elsewhere.

As a model ecosystem, the Chesapeake Bay is looked upon as an example of how to restore precious marine life and seagrasses, how to address population growth and agricultural runoff, and how to protect public health by ensuring that the local waters, the air we breathe, and the land upon which we depend for food are healthy and plentiful.

We have a responsibility to prepare future scientists and environmental stewards to meet the growing environmental challenges facing society. We support and mentor nearly 100 exemplary students each year, and we look forward to assuming an expanded role in graduate education and professional development.

We are also working to raise more private dollars to support our work—particularly for graduate fellowships. We would be grateful if you would consider using the enclosed envelope to make a gift to help us recruit the very best environmental scientists for our future. I thank the hundreds of individuals and institutions who have supported our work as reflected in the attached donor list.

The 2013 Annual Report highlights our distinctive research program that spans from the mountains to the sea—and beyond. Thank you for helping us chart a healthy environmental future for Maryland and the planet.

Regards,

Donald F. Boesch
President

We sincerely thank our many donors. Every gift is important and greatly appreciated.

Anonymous (15)
The Abell Foundation
Thomas H. Adams
AES Warrior Run
Frank Aikman, III
John E. Akridge, III
Allegany College
Paul J. Allen
Alliance Resource Partners, L.C. (Mettiki Coal)
Mr. and Mrs. Thomas T. Alspach
American Association of University Women
American Chemical Society
American Frozen Food Institute
Robert S. Anderson
M. Reamy Ancarrow and Michael Forcey
Bradley L. Anderson
Chris G. Anderson
Robert S. Anderson
Bruce and Blenda Armistead
David "Skip" Jones, Atlantic Concrete
Daniel Avis
J. Malcolm Bahrenburg
Bahri (Shipping Company of Saudi Arabia)
Bill and Joan Bailey
Ida Jane and Russell S. Baker, Jr.
Pamela K. Baker
David A. and Laura A. Balcom
Donald C. Balcom
Robert W. Baird & Company, Inc.
Dawn C. Balinski
Mary Jane and Stephen Barnes
Becky J. Barney
Joy A. Bartholomew
Boyce and Deloras Barwick
David J. Bates
Bay Instruments, LLC
The Bechdon Company, Inc.
Robert Belas
Mr. and Mrs. Richard Bernstein
Leslie E. Beveridge
Honsheng Bi
Virginia Bianco-Mathis
Wendy and Jay Bilas
Daniel Abraham Birch
Colin Bishop
Black and Veatch
Edward S. Blackburn
Karen Blizzard
Richard J. and Ellen G. Bodorff Foundation
Donald F. Boesch
Mr. and Mrs. Thomas H. Boggs, Jr.
William D. Boicourt
Booz Allen Hamilton
Gregory V. Boss
Barbara Boyd
Ronald C. Boyer
Walter R. Boynton
Brandon L. Braam
Brady P. Todd & Son, Inc.
Jeffrey H. Brainard
Kenneth Braitman and Ann Bristow

Cleo P. Braver and Alfred Tyler, II
John D. Briggs, III
Harold and Donna Britt
Elizabeth Ruggles Broadus
Leslie D. Broomfield
Blaise J. and Patricia A. Brown
Gordon and Lisa Brown
Jennifer Holly Bryan
Thomas L. Buckmaster
Amal S. Bukruian
Craig W. Caldwell
Calgon Carbon Corporation
Calvert Cliffs Nuclear Power Plant LLC
Cambridge High School – Class of 1945
Cambridge Main Street
Jim and Mary Campbell
The Campbell Foundation, Inc.
Donna Cantor and John Pinney
Carol J. Carlson
Robert L. Case
Nancy E. Catron
Brenda A. Cephas
Todd Cervini
Chaney Enterprises, Inc.
Shenn-Yu Chao
Feng Chen
Chesapeake Bay Trust
Victoria W. and William F. Childs
Choptank Electric Trust, Inc.
Choptank Heritage Trail
Jum Sook Chung
Lorraine B. Claggett
John B. Churchill
The Clark Charitable Foundation, Inc.
Juanita G. Clarke
Mr. and Mrs. William H. Clarke
Mr. and Mrs. A. James Clark
Bradford T. Clubb
Louis A. Codispoti
Coffey & Company, Inc.
Samuel Coleman
Terri S. Collison
Columbia Triathlon Association
Community Foundation of New Jersey
Community Trust Foundation (Naylor Family Trust)
Concordia Foundation
Sandra S. Cones
James E. Connell
Theresa M. Connors
Consortium for Ocean Leadership
Doug Cook
Mr. and Mrs. James N. Cooney
Lee W. Cooper
Mr. and Mrs. Richard L. Cooper
Jeffrey C. Cornwell
Cottingham Farm
James V. and Nancy L. Cotton
Cove Point Natural Heritage Trust
William Coyle
Craigs Drug Store, Inc.
Suzanne Luers Crawford

Beverly N. Creighton
Pamela M. Croghan
Mr. and Mrs. James L. Crothers
Carole V. Cummings
Byron C. Crump
Barbara D. Daspit
Benjamin Davies
Dina Davis
Michael E. and Patricia B. Davis
Melissa C. Day
Jane De Briyn
Deep Creek Cellars
Patricia Dekker
Patrick and Kathryn Delaney
Julio E. Delgado
Barbara and Louis Delbene
William C. Dennison and Judith O'Neil
Jeffrey T. Denton
Douglas E. and Dina L. Devers
Dock Street Foundation
Shamarene Layne Donato
Joanne C. Ditch
Dock Street Foundation
Dominion Cove Point
Shamarene Layne Donato
The Henry L. and Grace Doherty Foundation, Inc.
Sarah E. Donaldson
Cornell Douglas Foundation, Inc.
Joseph J. Drach and Patricia C. Mickelson
Michael Dreisbach and Jan Russell (Savage River Lodge)
DSM Nutritional Products
William H. Dunton
T. Coleman du Pont
Shaojun Du
Robert N. and Meghan G. Dunbar
William H. Dunton
Wildlife International (EAG, Inc.)
Earth Data, Inc.
Robert Ebel and Leslie Steen
Adelaide C. Eckardt
Edward M. Schmidt Revocable Trust
Edward S. Stolarz Foundation
Eglseder Retirement Specialists, Inc.
Craig R. Ellis
Joseph W. Ellis
Scott D. Ellis
Andrew Elmore
Donald Emerson and Dian Williams
Ernest and Frances A. Eskridge
Ralph and Hollis Ann Eskridge
Sara L. Ewing
Mr. and Mrs. George P.A. Eysymontt
Fair Play Foundation
Rosemary and Joseph Fasolo
Susan and Bob Feldhuhn
Mr. and Mrs. V. Raul Felipa
Michele L. Fick
Fidelity Charitable Gift Fund
Nicholas and Marcia Fidis
Mr. and Mrs. Thomas B. Finan
Jack Fischer
Paul H. and Vikki Fischer
Thomas R. Fisher, Jr. and Kalla L. Kvalnes
Dr. and Mrs. Michael Fisher
Ronald J. Flohr

John P. Foley and Lakshmi Vaidynathan
Forest Trends
Amy Forrest
France-Merrick Foundation, Inc.
Jerome M. Frank
Howard and Liz Freedlander
Curtis Friedenber
Scott and Cathy Ann Friedman
Carl and Marjorie Friedrichs
Frostburg State University Foundation, Inc.
Frostburg Vision Center
Carol and Brice Gamber
Gap International, Inc.
Garden Club of the Eastern Shore
Francis E. "Skip" Gardiner
Robert H. Gardner
Jill Jackson Garrett
Sarah L. Geer
Stacy L. Gehrt
Gene Haas Foundation
Gerard Boyle-Realtor
Doreen Getsinger
Keith and Lisa Marie Ghezzi
Suzanne M. Gibson
David M. Gillespie
Gipe Associates, Inc.
Albert B. Gipe and Dagmar D. P. Gipe
Russell Glerum
Charlotte Sebra Gore
Lawrence A. and Cheryl C. Grabenstein
Donald V. and Mary Graf
Grayce B. Kerr Fund
Dana Raye Gregory
Mr. and Mrs. Harry W. Grauel
Green Eyes, LLC
Ruth Noble Groom
Matthew and Linda Gros
Peter L. Gross
Steven K. Hack
Haeger/A. Phillips Corporation
Virginia Lynne Hall
Nicholas Hammond
Richard and Adele Hampson
Mr. and Mrs. Paul T. Hanrahan
Jay and Janet Hartford
Lora Harris
Gene Hass Foundation
Diana M. Heath
Kathleen R. Heil
Carolyn S. Helmy
Hendricks Foundation, Inc.
Gary L. and Deborah J. Hendrickson
Andrew and Deborah B. Heyes
Sheila A. Hickman
Randell H. Hiers
Jane Hilder
Russell T. Hill
Thomas E. and Catherine S. Hill
Brian P. Hochheimer and Marjorie Wax
Chadwick O. Hodgins
Mary M. Holston
Mildred Homa
Honeywell International
Jerry B. Hook and Jacqueline H. Smith
Mr. and Mrs. C. A. Porter Hopkins

L. David Horner
Martha F. Horner
Edward D. Houde
Nina Rodale Houghton
Gary Stephen Howard
William O. Hubbard
Mr. and Mrs. David I. Huffman
The Honorable Harry R. Hughes
Ikramul Huq
Richard J. Hynson, Jr.
IBM
Charlotte and Steven Icardi
Sara Immershein and Mark Levine
Independent Industries Inc.
Israel Family Foundation
Izaak Walton League - Mid-shore Chapter
Scott McGinn Jacoby
Rosemary Jagus
Pamela C. Jana
Jennifer Jarrett
James M. Jepson
Jean M. John
Jason Prescriptions
Beth Ann Johnson
Barbara M. Johnson
The Honorable and Mrs. Donald F. Johnson
Joan Johnson
Joie Devivre Gallery
Vernon Brewster Jones
Pauline M. Joseph
Patricia M. Glibert and Todd M. Kana
Janice Keene and Richard Sauer (Evergreen
Heritage Center)
Donnelle L. Keech
Keith Campbell Foundation for the Environment
Hall and Mary Kellog
Rense H. Kelsey
Janet B. Kemp
W. Michael Kemp
Helen and Thomas Kershaw
Kelly Halimeda Kilborne
Yvonne and Houston Kimbrough
Margaret Elaine Kimes
Dennis King
Jef and Mary Kinney
James Nicholas Klunder
Evamaria W. Koch
Christopher B. Koch
Mr. and Mrs. William H. Korab
Korean Institute of Ocean Science & Technology
Ronald M. and Marianne (Flip) Kreitner
Erica H. Kropp
Douglas R. Kyle
Lance Co. (Phillips Corp.)
Gene D. Lane
Augustine J. Lanzo
Laura L. Lapham
Renato and Bonnie Lapidario
Gina Lavoie
William Haddaway Layton
Andrew K. Leight
Sandra L. Leitner
Marion and Kim Leonard
L.E. Lerner
Richard M. Lerner

Burl C. Lewis
Ming Li
Eric V. Linn
Buffy Linehan and Ed Gabriel
Thomas M. Lingan, Esq.
Dr. and Mrs. Robert A. Locastro
Wilhelm Lohmann
Wen Long
Elizabeth St. John Loker and Donald S. Rice
The Mary and Daniel Loughran Foundation, Inc.
Horace M. Lowman
M&T Bank Corporation
Tracy A. Maccherola
Kathleen and Joseph Madden
Stacy L. Maffei
Alysha Mahunik
The Maids of Frederick, Inc.
Thomas C. Malone
Richard Marks and Amy Haines
Mr. and Mrs. Stanley R. Martin
Maryland Coastal Bays Program
Maryland Public Television
Kathleen Marshall
Richard and Elizabeth Mason
Molly F. Mastrangelo
C. Albert Matthews, Inc.
Carolyn and Thomas Matthews
Virginia H. Matthews
William "Sandy" McAllister, Jr., Esq.
Sull and Brenda McCartney
Jeanette McCarthy
James McCrary
Joe and Carolyn McDaniel
Liz McDowell and Ronald Boyer
Mr. and Mrs. Edward M. McElhiny
John W. McGinnis
McGladrey LLP
Bonnie R. McKenney
Michael McLeod
Erin Elizabeth McLeown
Martha N. McMahan
Nichole C. Mehaffie
James P. Melody
C. David and Jennifer Merryman
Mr. and Mrs. Brad Metzger
Mid-Atlantic Fishery Management Council
Midshore Riverkeeper
Mid-Shore Community Foundation
Donna Mielke
Richard P. Mied
Sara and John Milbourne
Miles River Yacht Club Foundation
Miles & Stockbridge Foundation
Carolyn Ann Miller
Robert and Debra A. Miller
Thomas J. and Gail T. Miller
Robert Wayne Miller
Jennifer L. Mills
Carys Mitchelmore
Mary Ann Moen
The Monet Family Fund
Mr. and Mrs. Charles O. Monk II, Esq.
Gordon and Betty Moore Foundation
Kenneth Alan Moore
Jeff and Martha Moran

Merry C. Morgan
Raymond Paul Morgan
Marci L. Morris
Fredrika C. Moser
James R. Murphy
Jonathan P. Murray
Laura Murray
Lois A. Narr
National Centre for Sustainable Coastal Management
National Fish and Wildlife Foundation
The Nature Conservancy
Janna L. Naylor
David and Cheryl Nemazie
NewPage Corporation
Roger I. E. Newell
William and Delores Nizinski
Mr. and Mrs. John W. Noble, Jr.
Rebecca E. Noetzel
Nortek USA
Elizabeth North
The Honorable John C. North, II
North Pacific Research Board
Northrup Grumman Corporation
Valinda R. Nwadike
Michael and Teresa Oates
Helen Olde
Mark A. Oliphant
L.S. Offenbacher
Helen Olde
Beale and Linn Ong
Cynthia M. Palinkas
Margaret A. Palmer
Sam and Phyllis Paolo
Barbara and Vincent Parmese
C. E. "Ted" and Delphene (Dee) Peck
Mark L. Pellerin
Charles Perrin and Rebecca Robinson
Pew Charitable Trusts
Albert Phillips
Phillips-Jeffreys Manufacturing Solutions
Doris W. Phillips
G. Steele Phillips
James J. Pierson
Chloe and David Pitard
The Honorable S. Jay Plager
Pixel Print & Post
Allen R. Place
Pogo Secretariat Plymouth Marine Lab
Jonathan J. Powers
David R. Press
Mike and Kathy Quattrone
Constance Anne Ralston
Martha J. Rau
The Rauch Foundation
Robert and Dale Rauch
Mary Anne E. Recto
Paul M. Reinbold
Sean P. and Susan K. Reincke
Restore America's Estuaries
Thomas H. Reynolds, Jr.
Reflections Memory Care
Mr. and Mrs. George W. Richards, III
Norma L. Richardson
The Frederick W. Richmond Foundation
William G. M. Ritchie

Hayley R. Richter
John M. and Ruby E. Riley
Katherine M. Robinson
Ken and Margie Roberts
Mr. and Mrs. Bruce D. Rogers
Reed T. Rollo
Mike and Jennie Roman
Christopher L. Rowe
R. Todd Rowley
Jeffrey S. Ruark
James A. Rumble
Steve T. Rupard
Janis Russell
Tina Ryan
Keiko Saito
David Salim
Susan Beth Sanders
Lawrence P. Sanford
Alyson E. Santoro and Nicholas J. Nidziedo
Saul Ewing LLP
Mrs. Francis B. Saul
Kathe and John Scanlon
Johan Schiff
Eric Schott
Beth A. Schucker
Mr. and Mrs. Michael E. Schrader
Charles P. Schutt
Jack T. Seabreeze
Chrystal F. Sears
Alexa C. Seip
Audrey J. Sento
Mr. and Mrs. Wayne H. Shaner
Herbert and Janice Sheppard
Mr. and Mrs. Langley R. Shook
Kelly A. Showell
Siemans, Inc.
Tiffany Simms
Mark D. Simpson
Stephen J. Simpson
George L. Sisson
Cynthia C. Slattery
Daniel Dunnington Smith
Edgar A. Smith
Katherine Smith
Renee A. Smith
Eva M. Smorzaniuk
Southern Maryland Electric Co-op
Susan St. George
Wayne and Betty Spiggle
Harry and Kristin Spiker
Jeff and Diane Staley
Linda and Mike Starling
State and Federal Contractors Water Agency
Lorie W. Staver
Sterne Kessler Goldstein Fox
J. Court and Catherine P. Stevenson
George and Beverly Stimmel
David Bingham Stinson
Diane K. Stoecker
Barbara A. Stokes
The Edward S. Stolarz Foundation.
Eileen K. Straughan
Kevin R. Sullivan
Richard and Janet Szoeh
Joseph Szymanski

James and Michele V. Swearengen
T&R Venture LLC
Ruth Tallman
Mitchell Taylor and Nora McCallum
Joseph Szymanski
Mario Tamburri
Volkan O. Taskin and Mary Ann Schindler
Cynthia E. G. Thomas
Jane Thomas
Lisa L. Thompson
Mr. and Mrs. Richard C. Tilghman, Jr.
Town Creek Foundation
Katherine L. Travers
Tri County Abstract, Inc.
Adrianna Trossbach
Sara Turner
UMCES HPL Working Fund
University System of Maryland Foundation
United Charity Campaign of Maryland (multiple gifts)
Bobby and Mary Van Fossan
Julie A. Van Orden
Van Strum Foundation
Jan Raczkowski Vincente
The Waddell Foundation
Lisa A. Wainger
David W. Wallace
Kara N. Waller
David M. Walser
Carroll J. Waskins
Dr. and Mrs. Stanley P. Watkins, Jr.
Mr. and Mrs. John H. Weaver
Mr. and Mrs. Philip J. Webster
Alison C. Weigel
Earl D. Weiner
W. Perry Welch
Amy D. Werking
Clinton and Joan West
Douglas D. West
Michael J. Wilberg
Carolyn H. Williams
Joanna F. Williams
Martha E. Williams
Angela M. Wolfse
Paul W. Wolfert
Lisa Dawn Wood
Glen O. Workman
World Wildlife Fund
Mr. and Mrs. Douglas W. Worrall
Wye Financial and Trust
Meng Xia
Donald G. Yentzer, Jr.
Wayne A. and Roveen L. Yoder
John C. Yorkilous and Rena Cherry Brown
Joyce A. Young
Margaret L. Young
Richard Zaveta
Cynthia and Francis Zumbrun
Howard A. Zwemer
Dorothy D. Zwissler

We apologize if we inadvertently omitted any names of those who supported our work over the past year or if any names have been misspelled.

BOARD OF VISITORS

Ronald Kreitner, Chair
WestSide Renaissance, Inc.

The Honorable Harry Hughes, Chair
(emeritus)
Former Governor, State of Maryland

Paul J. Allen
Senior Vice President (Retired),
Constellation Energy

Thomas L. Buckmaster
President, Honeywell Hometown Solutions

Victoria Childs
President, Friends of Jefferson Patterson Park
and Museum

James E. Connell
President, James E. Connell & Associates

Joseph J. Drach USAF (emeritus)
Former Director, Procurement and Supply,
University of Maryland Baltimore

Mike Dreisbach, Proprietor
Savage River Lodge

Paul Fischer
Chairman & CEO (Retired), GenVec

Frances Flanigan
Executive Director (emeritus), Alliance for the
Chesapeake Bay

Francis E. (Skip) Gardiner, Jr.
President, Gardiner Realty and Development
Company

The Honorable Wayne T. Gilcrest
(emeritus) Former member, U. S. House of
Representatives

Donald Graf
Executive Engineer, MPR Associates, Inc.

Thomas M. Lingan
Venable LLP

William W. McAllister, Jr.
Principal, Miles & Stockbridge P.C.

Patricia C. Mickelson (emeritus)
Former Director, Health Sciences Library,
University of Pittsburgh

Charles O. Monk II
Partner, Saul Ewing LLP

Jonathan Murray
The Murray Group

C. E. Peck
CEO and Chairman (retired), Ryland Group, Inc.

Kathy Quattrone
Chesapeake Seasons
(Retired PBS/Discovery Channel)

Terence Smith (emeritus)
Journalist

Eileen Straughan
Founder and CEO,
Straughan Environmental

David W. Wallace
Partner Emeritus, RK&K Engineers