

Re: Proposal to be a Partner in CW CESU

**Subject:** Re: Proposal to be a Partner in CW CESU  
**From:** "Robert H. Gardner" <gardner@al.umces.edu>  
**Date:** Mon, 10 Aug 2009 15:58:34 -0400  
**To:** Bobbye Bartels <bbartels@cnu.edu>  
**CC:** Paulette Orndorff <orndorff@al.umces.edu>

Bobbye Bartels wrote:

Dear Mr. Gardner:

I have attached Christopher Newport University's proposal to become a partner in CW CESU. Please let me know when we can expect to be notified of the status of our proposal. If anyone has questions, I'll be happy to answer them.

Thank you and I look forward to hearing from you.

Bobbye

--

Bobbye Hoffman Bartels  
Associate Dean for University Programs  
Professor of Mathematics  
ADMN 404F  
757.594.7579

Dear Dr. Bartels:

Thanks for this application. Due to vacations, etc. the process for approval will not begin until after labor day.  
I'll keep you posted.

Regards,

RHG

--

Robert H. Gardner, Director  
Appalachian Laboratory  
University of Maryland Center for Environmental Science  
301 Braddock Road  
Frostburg, MD 21532  
wk: (301) 689.7125 fax: (301) 689.7200  
[www.al.umces.edu/people/faculty/bobgardner.htm](http://www.al.umces.edu/people/faculty/bobgardner.htm)

Return-Path: <gardner@al.umces.edu>  
Received: from murder ([unix socket])  
by alx.al.umces.edu (Cyrus v2.3.8-OS X Server 10.5: 9C31) with LMTPA;  
Mon, 10 Aug 2009 15:58:33 -0400  
X-Sieve: CMU Sieve 2.3  
Received: from localhost (localhost [127.0.0.1])  
by alx.al.umces.edu (Postfix) with ESMTTP id CCD0882F951E;  
Mon, 10 Aug 2009 15:58:33 -0400 (EDT)  
Received: from alx.al.umces.edu ([127.0.0.1])  
by localhost (alx.al.umces.edu [127.0.0.1]) (amavisd-new, port 10024)  
with ESMTTP id zb+FSW4LZ71c; Mon, 10 Aug 2009 15:58:33 -0400 (EDT)  
Received: from [131.118.230.12] (dance.al.umces.edu [131.118.230.12])  
by alx.al.umces.edu (Postfix) with ESMTTP id 0604082F950E;  
Mon, 10 Aug 2009 15:58:33 -0400 (EDT)  
Message-ID: <4A807BEA.1050403@al.umces.edu>  
Date: Mon, 10 Aug 2009 15:58:34 -0400  
From: "Robert H. Gardner" <gardner@al.umces.edu>  
User-Agent: Thunderbird 2.0.0.22 (X11/20090608)  
MIME-Version: 1.0

Re: Proposal to be a Partner in CW CESU

To: Bobbye Bartels <[bbartels@cnu.edu](mailto:bbartels@cnu.edu)>  
CC: Paulette Orndorff <[orndorff@al.umces.edu](mailto:orndorff@al.umces.edu)>  
Subject: Re: Proposal to be a Partner in CW CESU  
References: <[9f3b579b0908101256o428ecea3if9381d51bdf6511d@mail.gmail.com](mailto:9f3b579b0908101256o428ecea3if9381d51bdf6511d@mail.gmail.com)>  
In-Reply-To: <[9f3b579b0908101256o428ecea3if9381d51bdf6511d@mail.gmail.com](mailto:9f3b579b0908101256o428ecea3if9381d51bdf6511d@mail.gmail.com)>  
Content-Type: text/plain; charset=ISO-8859-1; format=flowed  
Content-Transfer-Encoding: 7bit

Bobbye Bartels wrote:

Dear Mr. Gardner:

I have attached Christopher Newport University's proposal to become a partner in CW CESU. Please let me know when we can expect to be notified of the status of our proposal. If anyone has questions, I'll be happy to answer them.

Thank you and I look forward to hearing from you.

Bobbye

--

Bobbye Hoffman Bartels  
Associate Dean for University Programs  
Professor of Mathematics  
ADMN 404F  
757.594.7579

Dear Dr. Bartels:

Thanks for this application. Due to vacations, etc. the process for approval will not begin until after labor day.  
I'll keep you posted.

Regards,

RHG

--

Robert H. Gardner, Director  
Appalachian Laboratory  
University of Maryland Center for Environmental Science  
301 Braddock Road  
Frostburg, MD 21532  
wk: (301) 689.7125 fax: (301) 689.7200  
[www.al.umces.edu/people/faculty/bobgardner.htm](http://www.al.umces.edu/people/faculty/bobgardner.htm)

## **Proposal for the Inclusion of Christopher Newport University As a Partner in the Chesapeake Watershed Cooperative Ecosystems Study Unit**

The following proposal is submitted by Christopher Newport University (CNU) to the University of Maryland Center for Environmental Science (UMCES) in accordance with the "Suggestions for Prospective Partners" document provided by CW-CESU.

### **Overview of Christopher Newport University**

Christopher Newport University is a small, selective public university grounded in the principles of liberal learning and committed to outstanding teaching and research, inspired by sound scholarship. As a state university, CNU is committed to service that shapes the economic, civic, and cultural life of the surrounding community and the Commonwealth. With a student-to-faculty ratio of 17 to 1, CNU offers small classes, independent study, internships, service-learning opportunities, and study-abroad experiences, as well as undergraduate and graduate research opportunities.

The University is situated in Newport News, Virginia, part of Tidewater Virginia and an area that sits at the confluence of the James and York Rivers as they flow into the Chesapeake Bay. Tidewater and Hampton Roads are home to no fewer than 13 military facilities including the largest naval base in the United States (Norfolk Naval Base). The Virginia Living Museum is less than a mile from CNU and contains exhibits of the habitats, wildlife, and plant species from all regions of the state. Also within 5 miles of CNU are the Department of Energy's Thomas Jefferson National Accelerator Facility (J-Lab) and NASA Langley Research Center. The Hampton Roads is considered the world's greatest natural harbor, and much of the region's economy is based largely on port-related industries: ship building, ship repair, naval installations, cargo transfer and storage, and fishing (both commercial and recreational).

The University takes seriously its commitment to scholarship. Part of its six-year plan is to increase the number of research contracts. To help that happen, faculty have moved from a 4-4 to a 4-3 teaching load with a 3-3 teaching load planned for the future. Through a research consortium of four universities (Christopher Newport University, the College of William and Mary, Old Dominion University, and Norfolk State University), CNU has access to three research labs in the Applied Research Center (ARC) near Thomas Jefferson Laboratory. One emphasis at ARC is understanding our environment, including society's impact on the atmosphere, coastal waterways, rivers, and urban lakes. The ARC Consortium has expertise in the ecological monitoring of earth processes, including the ability to analyze soil samples and water quality. CNU also endorses the Grow by Degrees campaign launched on 22 June 2009 by the Virginia Business Higher Education Council. The goals of the program are to increase public-private collaboration on university-based research and to enhance economic development and workforce initiatives in the region.

As part of its commitment to support student research, the University's Undergraduate and Graduate Research Council is dedicated to fostering undergraduate and graduate research in liberal arts, sciences, and professional studies and hosts the University's annual conference, which provides a venue for the various disciplines to come together to share research and scholarship activities. With the appointment this fall of a Director of Student Research to further enhance and strengthen the quality and quantity of undergraduate research, CNU will, in effect, institutionalize graduate and undergraduate research, providing greater support and funding of student research and scholarship.

Research opportunities are further supported by the Paul and Rosemary Tribble Library, which opened in 2007 and integrates state-of-the-art technology with impressive reference materials. Additionally the holdings of the Mariner's Museum Library, arguably one of the largest maritime history collections in the Western Hemisphere, are housed in the Tribble Library. This collection offers researchers access to over 1,750,000 rare books, manuscripts, charts, photographs, and other archival materials that include a special collection on the Chesapeake Bay.

In addition to providing outstanding undergraduate academic preparation, CNU also serves the Commonwealth with Master's degree programs in Applied Physics and Computer Science, Environmental Science, and Teaching. The Applied Physics and Computer Science program partners with the Thomas Jefferson National Accelerator Facility, the Applied Research Center, and NASA Langley Research Center to provide opportunities for students to participate in funded research. The Environmental Science program provides a solid background in ecological and environmental conservation theory and practice, grounding much of its course work in wetlands ecology and marine ecology peculiar to the Chesapeake watershed. Finally, the Master of Arts in Teaching program, a 36-hour Master's and licensure program, draws on dedicated faculty from 12 different departments and partners with the award-winning Newport News Public Schools to provide valuable field experience for the region's, state's and nation's next generation of K-12 classroom teachers.

### **Ability of CNU to Contribute to the CW CESU Mission**

Christopher Newport University is already involved in forwarding the mission of the CW CESU to provide "leadership in watershed science and stewardship." Over the next five years, through a \$2.6 million grant from the National Science Foundation, CNU faculty and students will be working with high school Earth Science teachers in the Newport News Public Schools. This GK-12 project is an inquiry-based research/teaching approach used by graduate fellows and high school teachers to guide students in research of watershed issues impacting the local Chesapeake Bay. High school students will design and build field gear, sample local ponds and lakes, geospatially analyze (GIS) their results across the city's landscape (Web-linked), and take their results into the neighborhoods surrounding these watersheds to encourage the businesses and residents to be aware of their actions on water-quality and make recommendations for improvement. The GK-12 project is a partnership between Christopher Newport University, the five high schools of Newport News Public Schools (NNPS), the Engineering Department for the City of Newport News, and HR STORM, a committee of the Hampton Roads

Planning District Commission. (See Appendix A “CNU to Receive \$2.6 Million From National Science Foundation To Support a Research and Science Education Project” for more information on this project).

Additionally, CNU’s Center for Public Policy, working in partnership with the Virginia Environmental Endowment, is involved in surveying the public’s perception of Virginia’s natural environment. The first of a series of three reports to be released on Earth Day in 2009, 2010, and 2011 identified the health of the Chesapeake Bay and coal mining, particularly the mountaintop removal of coal, as the two most severe problems facing the state (See Appendix B “CNU Center for Public Policy and the Virginian Environmental Endowment Release Results of Virginia Survey on Climate Change” for more information on this project).

The previously mentioned maritime history collection housed in the Tribble Library also provides University professors and students immediate access to research materials on the natural and cultural history of the Chesapeake Bay and substantial documentation of early life in the Chesapeake Bay area.

Additionally, with President Obama’s Executive Order (May 12, 2009), declaring the Chesapeake Bay “a national treasure” and committing to “protect and restore the health, heritage, nature resources, and social and economic value of the nation’s largest estuarine ecosystem and the natural sustainability of its watershed,” the University’s geographic location between the York and James Rivers, near the mouth of the Chesapeake Bay, makes the campus and its resources a strategic center for the work outlined in the President’s Executive Order. The campus’ close proximity to the broad Bay marshes, the Grafton Plains, the Great Dismal Swamp and the Barrier Island system, has afforded its faculty and students with such research opportunities as outlined below:

- Ecological monitoring of water quality at sites along the Mattaponi and Pamunkey Rivers as part of the King William County Reservoir Water Quality Testing Project (Professors Jim Reed and Gary Whiting);
- The effects of abiotic and biotic habitat characteristics on habitat selection of freshwater and estuarine fishes as part of the Thompson Research Lab. Professor Jessica Thompson and her students are currently studying small fishes occupying Hoffler Creek, a tidal creek with bordering salt marsh that flows into the James River and is found within Hoffler Creek Wildlife Preserve in Portsmouth, Virginia;
- The analysis of wetland plants through the use of ion and gas chromatography (Professor Kathleen Brunke);
- The study of the nuclear fission process, with particular interest in the environmental impact of fission products (Professor Tyler Sullens). Professor Sullens is presently researching the fundamental interaction of fission products and their analogues with wetland environments to determine the fate, transport, and ultimate impact of

contaminations that might seep from spent fuel containers of nuclear electricity-generating reactors located near large waterways; and

- The Reclamation of the Tomahund Plantation, the largest gravel surface mining operation along the Chickahominy and James River (Professor Gary Whiting). This project, funded by a Virginia Department of Conservation & Recreation research grant, studies wetland assimilative capacity in an area that is still actively mined.

An Autonomous Data Collection and Integrity System

- The development of a data collection process, utilizing wireless sensor networking technology (Professor Anton Riedl). The developed system equips existing measurement stations with radio and processing modules, which transmit data samples to a central gateway located on the wetland site. From there they are forwarded to a data repository in the Internet, which allows users to display, analyze, and manage their data over the Web. In order to achieve data integrity assurance, data samples are time-stamped and cryptographically signed within the radio and processing module, before they are sent on to the gateway and the server. This way the originality of the data can be verified at a later point in time, making it impossible to modify them undetectably. The technologies utilized for the wetland monitoring system as well as the principles underlying the data integrity solution can similarly be applied to the monitoring of ecosystems in the Chesapeake Watershed. Especially where data need to be collected in inaccessible areas, wireless sensor networking can greatly improve the process.

- Finally the University's Center for Wetlands works with partners throughout the Chesapeake Bay watershed to enhance the quality and quantity of wetlands. Recent partners have included the Virginia Field Office of the US Fish and Wildlife Service, Norfolk district office of the US Army of Corps of Engineers, Virginia departments of Conservation and Recreation and the Game and Inland Fisheries, The Nature Conservancy and the Virginia Living Museum. Projects typically involve students at several levels, e.g., from planting trees to critically evaluating reasons for growth and survival of plantings.

### **Faculty Expertise**

**Dr. Robert Bolling Atkinson**—Professor Atkinson (Doctorate in Biology, Virginia Tech) has twenty years experience in Wetland Conservation, teaching graduate courses in Wetland Ecology, Restoration Ecology, Wetland Plant Taxonomy, and Wetland Delineation. As the Director of the Center for Wetland Conservation, which provides a multidisciplinary approach to wetland research and its conservation and management, he works with faculty from other universities to improve preservation, restoration, and creation and management of wetlands. Professor Atkinson has published extensively on the restoration and management of Atlantic white cedar swamps and structural and functional assessments of restored and created wetlands and has conducted over \$1.2 million in externally-funded research. His former students work for the US Fish & Wildlife Service, the Virginia Department of Environmental Quality, the Natural Heritage Program, The Nature Conservancy, and local environmental consulting firms.

**Kathleen Brunke**—(Doctorate in Organic Chemistry, Montana State University) directs the chemistry major at CNU. Her present work uses ion and gas chromatography to analyze wetland plants. She is also working with the Mariner's Museum to preserve USS Monitor artifacts and to develop projects for CNU students involving Monitor reclamation. Recently, she has presented findings on the iron content, as well as anions and cations, in tank samples from the USS Monitor.

**Quentin Kidd**—(Doctorate in Political Science, Texas Tech University) directs the Center for Public Policy at CNU and is currently conducting environmental attitudes polls, funded by a Virginia Environmental Endowment Grant.

**Anton Riedl**—(Doctorate in Electrical Engineering, Munich University of Technology), a former Fulbright Scholar at Purdue University, is presently teaching in CNU's Physics, Computer Science, and Engineering Department. Dr. Riedl is an expert in telecommunications and computer networking, focusing on applications in healthcare monitoring and environmental science. Together with Dr. Atkinson he has been working on a fully autonomous data collection and provisioning system for shallow groundwater monitoring in wetlands.

**Susan Romans**—(Doctorate in Communication Education, University of Maryland) has over 26 years of experience designing and developing training on technical subjects for both technical and nontechnical participants. Her work supports subject-experts by transforming their technical knowledge into accessible and engaging, audience-specific instructional activities and assesses changes in individual and organizational behavior as a result of training.

**Marsha Sprague**—(Doctorate in Education, University of Miami) has taught in public schools for over 20 years, ranging from kindergarten to high school, and has also served as a remedial reading teacher, staff development trainer, and special education consultant in the Department of Defense Dependents Schools. Currently she directs the Teacher Preparation Program at Christopher Newport University, and teaches the course "Reading and Writing in Content Areas." She has authored over 20 articles, and a current research interest focuses on reading and vocabulary strategies that promote understanding and interest.

**Tyler Sullens**—(Doctorate in Inorganic Chemistry, Auburn University) is researching the nuclear fission process, with particular interest in the environmental impact of fission products. His current work involves environmental analysis, evaluation, and monitoring utilizing multiple instrumentation methods (XRD, ICP-AES, ICP-MS, Laser Ablation, Liquid Scintillation Counting, FT-IR, UV-vis, Diffuse Reflectance, SEM, and DSC).

**Jessica Thompson**—(Doctorate in Zoology, North Carolina State University) was a National Science Foundation Graduate Research Fellow, 2001-2004, and presently teaches in the Biology, Chemistry, and Environmental Science Department at CNU. She has published extensively on fish and aquatic ecology.

**Ron Von Burg**—(Doctorate in Communication, University of Pittsburgh) teaches within the Communication Studies Department. His research focuses on how scientific arguments are rhetorically constructed for lay publics and on how the boundaries of science are rhetorically constructed for non-scientific audiences. This research engages the rhetoric of science scholarship and investigates how argumentative norms and disciplinary integrity are maintained both within the scientific community and between scientists and non-scientists.

**Gary Whiting**—(Doctorate in Biology, University of South Carolina) is an expert in wetland ecology, estuarine ecosystems, nutrient and carbon cycling in wetlands, ecosystem production, plant-microbe interactions, and remote sensing in wetlands.

### **Summary of Contributions**

As a member of the Chesapeake Watershed Cooperative Ecosystems Study Unit, Christopher Newport University would bring the active research agendas of many of CNU's professors, to the work of the CW-CESU. Additionally, the strong liberal arts and science focus of its undergraduate and graduate curriculum would provide opportunities for an interdisciplinary understanding of the Chesapeake Watershed. In short, CNU looks forward to membership in the CW-CESU and using its resources to enhance the organization's important work.



**CW-CESU Point of Contact**

Dr. Bobby Hoffman Bartels, Associate Dean for University Programs  
Christopher Newport University  
One University Place  
Newport News, Virginia 23606  
Phone: (757) 594-7579  
Fax: (757) 594-7508  
Email: [bbartels@cnu.edu](mailto:bbartels@cnu.edu)

## Appendix A



### **CNU to Receive \$2.6 Million From National Science Foundation To Support a Research and Science Education Project**

News Release - May 6, 2009

**Media Contacts:**

Lori Jacobs  
University Relations  
[lori.jacobs@cnu.edu](mailto:lori.jacobs@cnu.edu)  
(757) 594-7961

(NEWPORT NEWS, VA) – Christopher Newport University will receive \$2.6 million over the next five years from the National Science Foundation through the GK-12 Program. CNU's GK-12 project will focus on linking urban water quality with scientific research and education in the Chesapeake Watershed.

Project partners will include CNU's Department of Biology, Chemistry & Environmental Science and Department of Physics, Computer Science & Engineering; the five high schools of Newport News Public Schools; City of Newport News Department of Engineering; and HR STORM, the storm water education program of the Hampton Roads Planning District Commission.

CNU faculty and students and NNPS high school teachers will guide 9th grade Earth Science students in conducting ecological field studies to determine the environmental health of local urban watersheds. They will build a database for their neighborhoods, which will help the City of Newport News monitor and manage pollution levels entering the James River and Chesapeake Bay.

CNU's President Paul Triple stated: "The University is excited to have this opportunity to address an important environmental concern of our region while educating students. Moreover, this project will further connect our students to the community and provide important opportunities for service learning and leadership."

Dr. Gary Whiting, the project leader at CNU noted: "We hope that this project will be just the beginning of a future where the collaborative integration of science, education, government, private organizations and community will become the means of solving the complex problems we face as a society."

Newport News Mayor Joe Frank said: "I am proud that the City's Engineering Department has joined with Christopher Newport University, the Newport News Public Schools, Hampton Roads STORM, and the National Science Foundation in this exciting initiative to develop our students' environmental science skills and knowledge while creating extensive new data sources that will help our entire community better

understand how we affect water quality in the Chesapeake Bay."

Ashby C. Kilgore, Superintendent of Newport News Public Schools, said: "The partnership between Christopher Newport University and Newport News Public Schools will prepare our students to meet the challenges of the 21st century. This initiative will give our students hands-on environmental science skills and knowledge, making them better stewards of our community."

Using their scientific results and assistance from HR STORM, the students will provide information to their communities with the goal of improving water quality in the surrounding lakes and ponds. Project Information and recommendations will be shared with local businesses and residents over the course of this project.

Since its inception in 1999, the National Science Foundation GK-12 Program has funded over 200 projects at universities and organizations across the United States.

## Appendix B



---

### CNU Center for Public Policy and the Virginian Environmental Endowment Release Results of Virginia Survey on Climate Change

News Release - April 22, 2009

**Media Contact:**

Dr. Quentin Kidd, Director – CNU Center for Public Policy

[qkidd@cnu.edu](mailto:qkidd@cnu.edu)

Office: (757) 594-8499

Mobile : (757) 320-3980

( HAMPTON ROADS, VA) – Christopher Newport University's Center for Public Policy and the Virginia Environmental Endowment released today the results of a statewide survey on the public's perceptions of the natural environment in Virginia. This is the first of three studies on the environment scheduled for release on Earth Day in 2009, 2010 and 2011. The goal of these studies is to provide an assessment of public opinion on the natural environment and in turn contribute to public dialogue on the topic.

The survey released today asks respondents for a general assessment of the state's natural environment and uses a novel question format - the letter grade - as an assessment tool. Respondents are also asked to look into the future and assess in what state they think the natural environment will be in 10 years. Respondents are then asked about their personal views on the issue of climate change and to describe ways in which their own behavior has changed as a result of concerns about the environment. Finally, respondents are asked about specific environmental issues facing Virginia and about their support for specific policy options.

The survey shows several important things about the public's perception of the natural environment in Virginia. First, Virginians are largely pessimistic about the state's natural environment, giving it only an average grade overall. Second, Virginians have made changes to their own living and shopping habits in an effort to help better protect the environment. Third, Virginians are more concerned about the natural environment and the natural beauty of Virginia than about their own health. Finally, Virginians respond positively to many, but not all, policy proposals designed to change their behavior in ways that would be beneficial to the state's environment.

Other findings include:

- 52.9% of Virginians grade the natural environment in Virginia as either "C", "D", or "F." The average grade is "C." Two-thirds of Virginians think the environment will stay about the same or get worse over the next 10 years.
- 76.1% of Virginians think global warming is happening, and 29.6% of them have made major changes to their living and shopping habits to help protect the environment. 59.8% have made minor changes to their living and shopping habits.
- The most severe environmental problems facing Virginia are the health of the Chesapeake Bay and the mountaintop removal of coal

method of mining, according to respondents. The least severe problems are air pollution and pollution of drinking water.

- Nearly eight in 10 Virginians think it would be worth paying more for a new car or new home if new cars used less gas and new homes used less energy to heat and cool, but only half support cutting funding for new highway construction to increase funding for rail, transit and other alternatives to driving. A tax credit of up to \$500 would encourage about seven in 10 Virginians to make existing homes and buildings more energy efficient, but would only encourage about half of Virginians to purchase a hybrid car.
- Support for a “cap and trade” system hovers around 50% unless the money raised by the system goes back to individual people, in which case support goes up to 60%.

The full report, survey topline and survey cross-tabs can be found at <http://cpp.cnu.edu/>