



*Virginia Institute of Marine Science
School of Marine Science*

March 19, 2014

Lewis Linker
Chesapeake Bay Program Office
U.S. Environmental Protection Agency
410 Severn Avenue, Suite 109
Annapolis, MD 21403

Transmittal: "Comparison of Shallow-water Models for Use in Supporting Chesapeake Bay Management Decision-making," Dr. Marjorie Friedrichs, Principal Investigator

Dr. Linker:

On behalf of the Virginia Institute of Marine Science and Dr. Friedrichs, I am pleased to transmit the application materials for the above referenced proposal. We have prepared this application in accordance with instructions from the EPA Region 3 Application Kit for Grants and Cooperative Agreements. If we can provide any additional information, please contact Dr. Friedrichs (PI) at 804-684-7695 for technical matters or Ms. Heather Longest, at 804-684-7028, for administrative matters.

Sincerely,

Margaret Fonner
Director of Sponsored Programs

Application for Federal Assistance SF-424

* 1. Type of Submission:

- Preapplication
 Application
 Changed/Corrected Application

* 2. Type of Application:

- New
 Continuation
 Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

* 3. Date Received:

4. Applicant Identifier:

214103

5a. Federal Entity Identifier:

* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name:

VA Institute of Marine Science

* b. Employer/Taxpayer Identification Number (EIN/TIN):

546001802

* c. Organizational DUNS:

169516213

d. Address:

* Street1:

1375 Greate Road

Street2:

* City:

Gloucester Point

County:

* State:

Virginia

Province:

* Country:

USA: UNITED STATES

* Zip / Postal Code:

23062

e. Organizational Unit:

Department Name:

Biological Sciences

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

* First Name:

Marjorie

Middle Name:

A.M.

* Last Name:

Friedrichs

Suffix:

Ph.D.

Title:

Professor of Marine Science

Organizational Affiliation:

Virginia Institute of Marine Science

* Telephone Number:

804-684-7695

Fax Number:

804-684-7614

* Email:

marjy@vims.edu

Application for Federal Assistance SF-424

9. Type of Applicant 1: Select Applicant Type:

Public/State Controlled Institution of Higher Education

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.466

CFDA Title:

Chesapeake Bay Program

*** 12. Funding Opportunity Number:**

EPA-R3-CBP-14-02

* Title:

Evaluation of Multiple Shallow-water Systems Analysis to Improve the Assessment of Chesapeake Bay Water Clarity and Submerged Aquatic Vegetation Water Quality Standards

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

*** 15. Descriptive Title of Applicant's Project:**

Comparison of Shallow-water Models for Use in Supporting Chesapeake Bay Management Decision-making

Attach supporting documents as specified in agency instructions.

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant VA-001

* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal 79,356.00
* b. Applicant 60,006.00
* c. State 0.00
* d. Local 0.00
* e. Other 0.00
* f. Program Income 0.00
* g. TOTAL 139,362.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.) Applicant Federal Debt Delinquency Explanation**

Yes No

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative: * Date Signed:

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. CBPO, Year 1	66.466	\$	\$	18,475.00	25,949.00	44,424.00
2. CBPO, Year 2	66.466			60,881.00	34,057.00	94,938.00
3.						0.00
4.						0.00
5. Totals		\$ 0.00	\$ 0.00	\$ 79,356.00	\$ 60,006.00	\$ 139,362.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1) CBPO, Year 1	(2) CBPO, Year 2	(3)	(4)	
a. Personnel	\$ 8,425.00	\$ 11,058.00	\$	\$	\$ 19,483.00
b. Fringe Benefits	3,370.00	4,423.00			7,793.00
c. Travel					0.00
d. Equipment					0.00
e. Supplies					0.00
f. Contractual	5,000.00	20,000.00			25,000.00
g. Construction					0.00
h. Other	0.00	19,865.00			19,865.00
i. Total Direct Charges (sum of 6a-6h)	16,795.00	55,346.00	0.00	0.00	72,141.00
j. Indirect Charges	1,680.00	5,535.00			7,215.00
k. TOTALS (sum of 6i and 6j)	\$ 18,475.00	\$ 60,881.00	\$ 0.00	\$ 0.00	\$ 79,356.00

7. Program Income	\$ 0.00	\$	\$	\$	\$ 0.00
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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS	
8. CBPO, Year 1	\$ 25,949.00	\$	\$	\$ 25,949.00	
9. CBPO, Year 2	34,057.00			34,057.00	
10.				0.00	
11.				0.00	
12. TOTAL (sum of lines 8-11)	\$ 60,006.00	\$ 0.00	\$ 0.00	\$ 60,006.00	
SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 18,475.00	\$ 4,618.75	\$ 4,618.75	\$ 4,618.75	\$ 4,618.75
14. Non-Federal	25,949.00	6,487.25	6,487.25	6,487.25	6,487.25
15. TOTAL (sum of lines 13 and 14)	\$ 44,424.00	\$ 11,106.00	\$ 11,106.00	\$ 11,106.00	\$ 11,106.00
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program	FUTURE FUNDING PERIODS (Years)				
	(b) First	(c) Second	(d) Third	(e) Fourth	
16.CBPO, Year 1	\$	\$	\$	\$	
17.CBPO, Year 2	60,881.00				
18.					
19.					
20. TOTAL (sum of lines 16-19)	\$ 60,881.00	\$ 0.00	\$ 0.00	\$ 0.00	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges: Subaward listed as 'Other'			22. Indirect Charges: VIMS is charging 10% of Total Direct Costs - \$7,215		
23. Remarks:					

WORK PLAN:

Comparison of Shallow-water Models for Use in Supporting Chesapeake Bay Management Decision-making

Name of Organization:

Virginia Institute of Marine Science, College of William & Mary

Introduction

The Chesapeake Bay Program (CBP), authorized by Section 117 of the Clean Water Act, is responsible for coordinating federal, state, and local efforts to restore and protect living resources and water quality of the Bay. Because of the size and complexity of the Chesapeake Bay, the CBP must rely on computer models to guide their decision-making and understand the impacts of various environmental actions to reduce pollution in the Bay. The shallow waters of the Bay (< 3 m deep) are of great interest to the CBP, as they are some of the most difficult to simulate with the current CBP Model framework, and because this is where some of the most significant initial effects of management efforts may be observed. As a result, the CBP Partnership is currently directing efforts towards the improvement of this component of the CBP Model framework, and specifically is seeking proposals for the quantitative evaluation and comparison of multiple shallow water Bay models.

The overarching goal of this proposed effort will be to compare the results from multiple shallow water models in a consistent manner that facilitates the determination of the model(s) and/or the modeled process that are the most skillful at modeling shallow water regions of the Bay. By furthermore quantitatively evaluating and comparing the water quality response of multiple models to a set of nutrient reduction strategies, the project proposed here will also increase community confidence in our ability to manage water quality in the Chesapeake Bay.

Work Plan Objective/Project Descriptions

<p>Objective</p>	<p>Comparison of Shallow-water Models for Use in Supporting Chesapeake Bay Management Decision-making</p>	<p>Budget for this Objective:</p>	<p><i>Total: \$139,362 EPA Share: \$79,356 Non Federal Share: \$60,006</i></p>
<p>Narrative Summary of Outputs for this Objective:</p>	<p>The overarching goal of this proposed effort will be to compare the results from multiple shallow water models in a consistent manner that facilitates the determination of the model(s) and/or the modeled process that are the most skillful at modeling shallow water regions of the Bay. By furthermore quantitatively evaluating and comparing the water quality response of multiple models to a set of nutrient reduction strategies, the project proposed here will also increase community confidence in our ability to manage water quality in the Chesapeake Bay. This project will also require close communication with the CBP Modeling Workgroup (MW) and with the shallow water modeling teams funded through this RFP to make sure model results are suitable for inclusion in the multiple model comparisons and are provided in a timely manner. A list of tasks is included below.</p>		

<p>Description of Objective:</p>	<p><i>1) What is the ultimate goal of the project?</i></p> <p>The ultimate goal of this project is:</p> <ul style="list-style-type: none"> i. to assess the relative skill of multiple linked hydrodynamic+water quality models in terms of their ability to reproduce observations of various hydrodynamic and water quality variables at select shallow water sites in the Bay ii. to compare the modeled Submerged Aquatic Vegetation (SAV) computed from an empirical SAV model for each participating hydrodynamic+water quality model, and iii. to compare results of nutrient reduction strategies applied to these multiple estuarine models at these select sites. <p>Ultimately this work, to be conducted for multiple specified shallow water sites within the Bay, will enable more effective adaptive management and accountability, and build increased scientific, management and stakeholder community confidence in the tools used to support and inform partnership collaborative decision-making.</p> <p><i>2) What will be accomplished during the current grant cycle?</i></p> <ul style="list-style-type: none"> i. We will work closely with the CBP MW to ensure they select specific study sites in a timely manner. Immediate identification of these sites will be crucial to the timely execution and success of the project. ii. We will work closely with the CBP MW to ensure that they provide all necessary fields in a standard user-friendly format that can be utilized by all modeling teams (e.g. netcdf). This includes validation data, forcing data and boundary conditions. Depending on the site selection, validation data may not all be in the public domain and readily accessible, thus efforts to digitize and reformat the data may have to be undertaken. Boundary conditions, derived from CBP Model output, may also need to be reformatted for ease of usage by the modeling teams. We will oversee the CBP staff member assigned to complete this task, to ensure that all data are provided in a standard format. iii. We will work with the CBP MW to acquire CBP Model output for the selected shallow water sites and selected 3-5 year time periods. In addition we will work with the CBP to ascertain the selected nutrient reduction strategies to be implemented, and acquire CBP Model output for these specified nutrient reduction strategies. iv. We will begin to quantitatively assess the skill of the existing CBP Model in reproducing the shallow water data. This quantitative assessment will build upon previous work using standard skill assessment techniques for multiple model comparison, including determination of root mean square error (RMSE) and development of quantitative visual skill assessment tools such as target diagrams. With input from the modeling teams and the CBP MW, an effort will be made
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	<p>to develop and implement thresholds for classifying model accuracy that can be easily used by managers to classify a model prediction as “accurate”, “acceptable”, etc... The model intercomparison will also be formulated in a manner that allows for the addition of more or updated models in the future and the easy expansion to other skill metrics to facilitate future use.</p> <p>v. By the start of Year 2, we expect to receive model outputs from the funded modeling teams at the selected sites, for the selected 3-5 year time periods.</p> <p>3) If a multi-year project, what has been completed in previous years? Is the project on track?</p> <p>N/A</p>
<p>Tasks Under this Objective:</p>	<p><i>See i-v above.</i></p>
<p>Specific Outputs for this Objective</p>	<p><u>Programmatic</u></p> <p>We will work with the three funded shallow water modeling teams to insure that they are providing us with consistent estimates of the eight required variables, i.e. temperature, salinity, dissolved oxygen, water clarity, chlorophyll a, nutrients, total suspended solids, and CDOM, for the selected sites.</p>
<p>Outcomes for this Objective:</p>	<p><u>Chesapeake 2000 Commitment:</u></p> <p>3.1.2: Correct the nutrient- and sediment-related problems in the Chesapeake Bay and its tidal tributaries sufficiently to remove the Bay and the tidal portions of its tributaries from the list of impaired waters under the Clean Water Act.</p>
<p>Link to EPA’s Strategic Plan</p>	<p><u>EPA Strategic Plan Goal</u> Goal 2: Protecting America’s Waters <u>EPA Strategic Plan Objective</u> 2.2: Protect and Restore Watersheds and Aquatic Ecosystems</p>
<p>Link to Jurisdiction’s WIP Commitment(s)</p>	<p>N/A</p>
<p>Link to Priority Practices and/or Priority Watersheds</p>	<p>N/A</p>
<p>Progress for this Objective</p>	<p>N/A</p>

Budget Detail (Year 1)

<u>Personnel</u> Position/Title	Annual Salary	% time on project (Y1)	Est Costs (Y1)	VIMS Costs (Y1)	Total
Dr. M. Friedrichs (VIMS Res. Assoc. Prof.)	\$101,100	25%	\$8,425	\$16,850	<u>\$25,275</u>
<u>Fringe (40%)</u>			\$3,370	\$6,740	<u>\$10,110</u>
<u>Contractual</u> Dr. A. Bever (250 hours @ \$100/hr) (Delta Modeling Associates)			\$5,000		<u>\$5,000</u>
<u>Indirect Charges (10% of total award)</u> VIMS (capped by EPA)			\$1,680	\$2,359	<u>\$4,039</u>
<u>Total</u>			\$18,475	\$25,949	<u>\$44,424</u>

Summary of Staff Funded:

Dr. Marjorie Friedrichs

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.


PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL		TITLE	
 <small>Digitally signed by Margaret J. Fonner DN: cn=Margaret J. Fonner, o=Virginia Institute of Marine Science, ou=Sponsored Programs, email=mfonner@vims.edu, c=US Date: 2014.03.18 16:10:11 -04'00'</small>		Director of Sponsored Programs	
APPLICANT ORGANIZATION		DATE SUBMITTED	
Virginia Institute of Marine Science		March 18, 2014	



KEY CONTACTS FORM

Authorized Representative: *Original awards and amendments will be sent to this individual for review and acceptance, unless otherwise indicated.*

Name: Margaret J. Fonner
 Title: Director of Sponsored Programs
 Complete Address: P.O. Box 1346, 1375 Greate Road
Gloucester Point, VA 23062
 Phone Number: 804-684-7029

Payee: *Individual authorized to accept payments.*

Name: Paulette Topping
 Title: Cashier
 Mail Address: P.O. Box 1346, 1375 Greate Road
Gloucester Point, VA 23062
 Phone Number: 804-684-7040

Administrative Contact: *Individual from Sponsored Program Office to contact concerning administrative matters (i.e., indirect cost rate computation, rebudgeting requests etc.)*

Name: Heather C. Longest
 Title: Sponsored Programs Administrator
 Mailing Address: P.O. Box 1346, 1375 Greate Road
Gloucester Point, VA 23062
 Phone Number: 804-684-7028
 FAX Number: 804-684-7614
 E-Mail Address: hlongest@vims.edu

Principal Investigator: *Individual responsible for the technical completion of the proposed work.*

Name: Dr. Marjorie A.M. Friedrichs
 Title: Professor of Marine Science
 Mailing Address: P.O. Box 1346, 1375 Greate Road
Gloucester Point, VA 23062
 Phone Number: 804-684-7695
 FAX Number: 804-684-7614
 E-Mail Address: marjy@vims.edu
 Web URL: www.vims.edu



DEPARTMENT OF THE NAVY
 OFFICE OF NAVAL RESEARCH
 876 NORTH RANDOLPH STREET
 SUITE 1425
 ARLINGTON, VA 22203-1895

IN REPLY REFER TO:
 Agreement Date: June 25, 2012

NEGOTIATION AGREEMENT

**INSTITUTION: VIRGINIA INSTITUTE OF MARINE SCIENCES
 WILLIAMSBURG, VIRGINIA 23187-8795**

The Facilities and Administrative (F&A) rate contained herein is for use on grants, contracts and/or other agreements issued or awarded to the Virginia Institute of Marine Sciences (VIMS) by all Federal Agencies of the United States of America, in accordance with the cost principles mandated by 2 CFR 220. These rates shall be used for forward pricing and billing purposes for VIMS' Fiscal Year (FY) 2013. This rate agreement supersedes all previous rate agreements/determinations for Fiscal Year(s) 2013.

Section I: RATES - TYPE: PROVISIONAL (PROV)

Indirect Cost Rates (F&A):

<u>TYPE</u>	<u>FROM</u>	<u>TO</u>	<u>RATE</u>	<u>LOCATION</u>	<u>BASE</u>	<u>APPLICABLE TO</u>
PROV	7/1/2012	Until Amended	44.0%	On-Campus	(a)	Organized Research

DISTRIBUTION BASES

- (a) Modified Total Direct Costs (MTDC), as defined in 2 CFR 220, consisting of all salaries and wages, fringe benefits, materials and supplies, services, travel, and subgrants and subcontracts up to the first \$25,000 of each subgrant or subcontract (regardless of the period covered by the subgrant or subcontract). Equipment, capital expenditures, charges for patient care and tuition remission, long term space rental costs, scholarships, and fellowships as well as the portion of each subgrant and subcontract in excess of \$25,000 shall be excluded from Modified Total Direct Costs.

SECTION II - GENERAL TERMS AND CONDITIONS

A. LIMITATIONS: Use of the rates set forth under Section I is subject to any statutory or administrative limitations and is applicable to a given grant, contract or other agreement only to the extent that funds are available and consistent with any and all limitations of cost clauses or provisions, if any, contained therein. Acceptance of any or all of the rates agreed to herein is predicated upon all the following conditions: (1) that no costs other than those incurred by the grantee/contractor were included in its indirect cost pool as finally accepted and that all such costs are legal obligations of the grantee/contractor and allowable under governing cost principles; (2) that the same costs that have been treated as indirect costs are not claimed as direct costs; (3) that similar types of costs, in like circumstances, have been accorded consistent accounting treatment; (4) that the information provided by the contractor/grantee, which was used as the basis for the acceptance of the rates agreed to herein and expressly relied upon by the Government in negotiating the said rates, is not subsequently found to be materially incomplete or inaccurate.

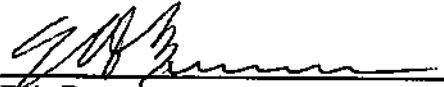
B. ACCOUNTING CHANGES: The rates contained in Section I of this agreement are based on the accounting system in effect at the time this agreement was negotiated. Changes to the method(s) of accounting for costs, which affects the amount of reimbursement resulting from the use of these rates, require the written approval of the authorized representative of the cognizant negotiating agency for the Government prior to implementation of any such changes. Such changes include but are not limited to changes in the charging of a particular type of cost from indirect to direct. Failure to obtain such approval may result in subsequent cost disallowances.

C. PROVISIONAL RATES: The provisional rates contained in this agreement are subject to unilateral amendment by the Government or bilateral amendment by the contracting parties at any time.

D. USE BY OTHER FEDERAL AGENCIES: The rates set forth in Section I hereof were negotiated in accordance with and under the authority set forth in 2 CFR 220. Accordingly, such rates shall be applied to the extent provided in such regulations to grants, contracts and other transactions to which 2 CFR 220 is applicable, subject to any limitations in part A of this section. Copies of this document may be provided by either party to other Federal agencies which have or intend to issue or award grants and contracts using these rates or to otherwise provide such agencies with documentary notice of this agreement and its terms and conditions.

Accepted:

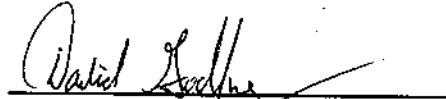
FOR THE VIRGINIA INSTITUTE OF
MARINE SCIENCES:



E.A. Brummer
Director of Financial Operations

6/26/12
Date

FOR THE U.S. GOVERNMENT:



David F. Godfrey
Contracting Officer

6/26/12
Date

For information concerning this agreement contact:

DAVID F. GODFREY, Contracting Officer
Office of Naval Research
875 North Randolph Street
Arlington, VA 22203-1995

Phone: (703) 696-2586
E-mail: david.f.godfrey@navy.mil

EPA Project Control Number

CERTIFICATION REGARDING LOBBYING

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Margaret J. Fonner, Director of Sponsored Programs

Typed Name & Title of Authorized Representative



Digitally signed by Margaret J. Fonner
DN: cn=Margaret J. Fonner, o=Virginia Institute of Marine
Science, ou=Sponsored Programs, email=mfonner@vims.edu,
c=US
Date: 2014.03.18 16:11:09 -04'00'

Signature and Date of Authorized Representative

**Preaward Compliance Review Report for
All Applicants and Recipients Requesting EPA Financial Assistance**
Note: Read instructions on other side before completing form.

I. Applicant/Recipient (Name, Address, State, Zip Code). Virginia Institute of Marine Science, 1375 Greate Road Gloucester Point, VA 23062	DUNS No. 169516213
II. Is the applicant currently receiving EPA assistance? Yes	
III. List all civil rights lawsuits and administrative complaints pending against the applicant/recipient that allege discrimination based on race, color, national origin, sex, age, or disability. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.) <p align="center">None</p>	
IV. List all civil rights lawsuits and administrative complaints decided against the applicant/recipient within the last year that allege discrimination based on race, color, national origin, sex, age, or disability and enclose a copy of all decisions. Please describe all corrective action taken. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.) <p align="center">None</p>	
V. List all civil rights compliance reviews of the applicant/recipient conducted by any agency within the last two years and enclose a copy of the review and any decisions, orders, or agreements based on the review. Please describe any corrective action taken. (40 C.F.R. § 7.80(c)(3)) <p align="center">None</p>	
VI. Is the applicant requesting EPA assistance for new construction? If no, proceed to VII; if yes, answer (a) and/or (b) below. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
a. If the grant is for new construction, will all new facilities or alterations to existing facilities be designed and constructed to be readily accessible to and usable by persons with disabilities? If yes, proceed to VII; if no, proceed to VI(b). Yes <input type="checkbox"/> No <input type="checkbox"/> b. If the grant is for new construction and the new facilities or alterations to existing facilities will not be readily accessible to and usable by persons with disabilities, explain how a regulatory exception (40 C.F.R. § 7.70) applies. Yes <input type="checkbox"/> No <input type="checkbox"/>	
VII.* Does the applicant/recipient provide initial and continuing notice that it does not discriminate on the basis of race, color, national origin, sex, age, or disability in its programs or activities? (40 C.F.R. § 5.140 and § 7.95) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
a. Do the methods of notice accommodate those with impaired vision or hearing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No b. Is the notice posted in a prominent place in the applicant's offices or facilities or, for education programs and activities, in appropriate periodicals and other written communications? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No c. Does the notice identify a designated civil rights coordinator? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
VIII.* Does the applicant/recipient maintain demographic data on the race, color, national origin, sex, age, or handicap of the population it serves? (40 C.F.R. § 7.85(a)) Yes +	
IX.* Does the applicant/recipient have a policy/procedure for providing access to services for persons with limited English proficiency? (40 C.F.R. Part 7, E.O. 13166) Yes +	
X.* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it designated an employee to coordinate its compliance with 40 C.F.R. Parts 5 and 7? Provide the name, title, position, mailing address, e-mail address, fax number, and telephone number of the designated coordinator.	
XI* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it adopted grievance procedures that assure the prompt and fair resolution of complaints that allege a violation of 40 C.F.R. Parts 5 and 7? Provide a legal citation or Internet address for, or a copy of, the procedures.	

For the Applicant/Recipient

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. I assure that I will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized Official 	B. Title of Authorized Official Director of Sponsored Programs	C. Date 3/18/2014
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For the U.S. Environmental Protection Agency

I have reviewed the information provided by the applicant/recipient and hereby certify that the applicant/recipient has submitted all preaward compliance information required by 40 C.F.R. Parts 5 and 7; that based on the information submitted, this application satisfies the preaward provisions of 40 C.F.R. Parts 5 and 7; and that the applicant has given assurance that it will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized EPA Official See ** note on reverse side	B. Title of Authorized EPA Official	C. Date
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