UNIVERSITY OF MARYLAND CENTER FOR ENVIRONMENTAL SCIENCE

ASSURANCE NUMBER A4160-01

ANIMAL WELFARE ASSURANCE
in accordance with the PHS Policy for
Humane Care and Use of Laboratory Animals

I, Dr. Donald F. Boesch, as named Institutional Official (IO) for animal care and use at University of Maryland Center for Environmental Science (UMCES), hereinafter referred to as Institution, by means of this document, provide assurance that this Institution will comply with the Public Health Service Policy (PHS) on Humane Care and Use of Laboratory Animals, hereinafter referred to as PHS Policy.

I. APPLICABILITY OF ASSURANCE

This Assurance is applicable to all research, research training, experimentation, biological testing, and related activities, hereinafter referred to as activities, involving live vertebrate animals supported by the PHS and conducted at this Institution, or at another institution as a consequence of the subgranting or subcontracting of a PHS-conducted or -supported activity by this Institution.

"Institution" includes the following branches and major components of UMCES: Appalachian Laboratory (AL), Frostburg, Maryland; Chesapeake Biological Laboratory (CBL), Solomons, Maryland; and Horn Point Laboratory (HPL), Cambridge, Maryland.

II. INSTITUTIONAL COMMITMENT

A. This Institution will comply with all applicable provisions of the Animal Welfare Act (AWA) and other Federal statutes and regulations relating to animals.

B. This Institution is guided by the "U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training."

C. This Institution acknowledges and accepts responsibility for the care and use of animals involved in activities covered by this Assurance. As partial fulfillment of this responsibility, this Institution will ensure that all individuals involved in the care and use of laboratory animals understand their individual and collective responsibilities for compliance with this Assurance, as well as all other applicable laws and regulations pertaining to animal care and use.

D. This Institution has established and will maintain a program for activities involving animals in accordance with the “Guide for the Care and Use of Laboratory Animals,” (“Guide”).
III. INSTITUTIONAL PROGRAM FOR ANIMAL CARE AND USE

A. The lines of authority and responsibility for administering the program and ensuring compliance with this Policy are as follows: a diagram, "Organizational Flow Chart" is appended as an attachment.

B. The qualifications, authority, and percent of time contributed by the veterinarian(s) who will participate in the program are as follows:

Name: Janet E. Whaley

Qualifications:
- Degrees: D.V.M.
- Training and/or experience in laboratory animal medicine, Fisheries Biologist in the Marine Mammal Division, National Marine Fisheries Service, Office of Protected Resources, Silver Spring, Maryland. As of February 2011, Dr. Whaley is serving as a Veterinary Medical Officer with the USDA Animal and Plant Health Inspection Service, Veterinary Services, Aquatic Animal Health Program Manager, Riverdale, Maryland. The Veterinarian is licensed to practice veterinary medicine in Maryland and has served as Chair of the Aquatic Animal Health Subcommittee of the Maryland Aquaculture Advisory Commission. Dr. Whaley has twenty years postgraduate experience in laboratory and field animal medicine. Dr. Whaley's expertise is in finfish research and toxicology that is directly applicable to many of the vertebrate animal activities at UMCES, notably research and graduate studies in aquatic toxicology and aquaculture.

Authority: Dr. Whaley has delegated direct program authority and responsibility for the Institution's animal care and use program.

Time Contributed to Program: The veterinarian will advise the Institutional Animal Care and Use Committee (IACUC), the Laboratory Directors, and the President of UMCES (IO), on appropriate procedures for use of finfish in research as set forth in the “Guide” and other applicable documents as identified at III.D.1 below. The veterinarian may advise the IACUC to require specific changes in research protocol before faculty or student research is initiated. Further, the veterinarian has the authority to suspend immediately any research found to be conducted in violation of UMCES or PHS policy until the IACUC shall advise the President (IO) of the Institution that such violation(s) have been remedied. Dr. Whaley’s authority pertains to all vertebrate animal research at UMCES, whether or not the research is funded by the PHS.

Time Contributed to Program: The veterinarian will contribute 5% time in direct service to IACUC for site visits, research protocol review, and annual training. The veterinarian is required to attend a site visit at each laboratory at least once during each year; she is also required to be at all semi-annual meetings and class training session(s). In addition, she will be available as needed by faculty and students for advice and consultation. Dr. Whaley is under contract to UMCES and is paid on an hourly basis to provide the above services.
Should Dr. Whaley not be available, the Institution will request back-up assistance from Dr. Cindy Driscoll, Wildlife Veterinarian, with the Cooperative Oxford Laboratory, Maryland Department of Natural Resources, Oxford, Maryland.

C. The IACUC at this Institution is properly appointed in accordance with the PHS Policy IV.A.3.a and is qualified through the experience and expertise of its members to oversee the Institution's animal care and use program and facilities. Our IACUC consists of seven members, and its membership meets the composition requirements set forth in the PHS Policy, Section IV.A.3.b. Attached is a list of the chairperson and members of the IACUC and their names, degrees, profession, titles or specialties, and institutional affiliations.

D. The IACUC will:

1. Review at least once every six months the Institution’s program for humane care and use of animals, using the “Guide” as a basis for evaluation.

The IACUC procedures for conducting semi-annual program reviews are as follows: The IACUC is mandated to review at least once every six months the Institution’s program for the care and use of animals using the “Guide” as a basis for evaluation. All members of the IACUC are invited to participate in the Program Review via the University System of Maryland Interactive Video Network or IVN with real-time voice and video conferencing. The Chair convenes a meeting with a quorum from the Full Committee. Once a quorum is established, the Chair continues by reviewing the Institutional Policies and Responsibilities, minutes from the last meeting, goes over old business, and then moves on to new business on various issues, any problems, and future plans.

The last semi-annual meeting was held November 16, 2010. Reviews were performed by the IACUC as a whole over the IVN on November 16, 2010, voting as needed. The next meeting will be scheduled in six months from this date.

2. Inspect at least once every six months all of the Institution's animal facilities, including satellite facilities, using the “Guide” as a basis for evaluation. The IACUC procedures for conducting semi-annual facility inspections are as follows:

Semi-annual inspections are performed by at least two members of the IACUC using the Semi-annual Facility Site Visit Checklist. The veterinarian is required to be present at one of the semi-annual inspections at each laboratory of the Institution (AL, HPL, or CBL) during the year. All members of the IACUC are encouraged to participate in the Facility Site Inspections. The IACUC has access to all areas within the laboratories for the purpose of verifying that activities involving animals are being conducted in accordance with the protocol approved by the IACUC. Any sites where animals are held for 12 hours or more are inspected by the IACUC. Furthermore, any satellite holding facilities or areas where surgical manipulations are done are included in the semi-annual reviews. The inspection committee does a walk-through of the laboratory that is up for inspection looking for any minor or significant deficiencies and records them on the Facility Site Visit Checklist. The IACUC also monitors other areas within the
laboratories where only routine immunization, dosing, and weighing take place by random site visits and evaluations.

After inspection, a letter is written to the Principal Investigator (PI) in charge of the laboratory inspected with a copy to the Director and Safety Officer. The letter consists of an explanation of the deficiency or that there are no deficiencies. If deficiencies are found, the inspection team asks the PI or Laboratory Manager to correct the deficiency by an agreed upon deadline. The Chair will then check back to see if the job has been completed or whether more time is needed to correct the deficiency. The completion date is noted on the checklist. If it is a significant deficiency, the PI is asked to move vertebrates from the area, if this is needed, until the deficiency is corrected. A report of the semi-annual inspection is then sent to the IO with an explanation of the deficiency and the schedule for completion.

3. Prepare reports of the IACUC evaluations as set forth in the PHS Policy IV.B.3 and submit the reports to the IO. The IACUC procedures for developing reports and submitting them to the IO are as follows:

1) Procedures for Program Reviews: At the Semi-annual Meeting, the IACUC goes over the program review. This information is received from the semi-annual site inspections done throughout the year. This report is sent to the IO along with the Semi-annual Meeting report.

2) Procedures for Facility Site Inspections: Facility site inspections occur on a semi-annual basis with two members of the IACUC attending each laboratory inspection. The veterinarian is required to attend one site inspection at each laboratory at least once each year. The veterinarian can be called in at any time for special inspection, if needed.

3) Process for Deficiency Correction: All minor or significant deficiencies resulting from any inspections are reported to the Chair of IACUC by the inspection team. A letter is sent to the PI and Director of the respective laboratory involved from the Chair of IACUC requesting a resolution of the deficiency. A date is set for completion of correction(s) for any noted deficiencies. The IACUC requires a written response via email or otherwise from the PI and/or Director at the conclusion. If a deficiency is not completed satisfactorily, the Chair discusses with the PI what is needed, then reports to the Director of the laboratory finalizing the correction. All transactions are encompassed in the Semi-annual Meeting and a separate report is sent to the IO. The IACUC will self-report to OLAW, if needed. If there are no deficiencies, it is conveyed in the Semi-annual Report to the IO.

4. Review concerns involving the care and use of animals at the Institution. The IACUC procedures for reviewing concerns are as follows:

Anyone at UMCES or from the public who would like to report concerns of animal care and use at UMCES is free to contact the IACUC Chair or any member of IACUC with their confidential concerns at iacuc@umces.edu. A list of the Committee members can be found on MyUMCES website at http://www.umces.edu/about/myUMCES under IACUC. These policies can also be
found at the UMCES Policies and Procedures, under Sponsored Programs/Humane Care and Use of Vertebrate Animals, VII-2 - Assurance of Compliance with Public Health Service Policy on Humane Care and Use of Laboratory Animals, Appendix VII-2.2. The IACUC procedures for reviewing concerns, if needed, are communicated by email to the Chair and members of the IACUC, and discussed at a convened meeting via IVN (audio-visual) face-to-face conferencing or in person. The convened Committee reviews the concerns and decides what action should be taken to rectify any deficiency(s) by a majority vote of the Committee with a quorum. The Chair then notifies the UMCES President (IO) of concerns and alternative ways to correct the deficiency(s). At any time, with a majority vote of the quorum present, the Committee can suspend a previously approved or current activity. If the concerns are of a serious nature, then the Committee will forward the information and how to correct this serious deficiency to the IO and OLAW.

The reporting procedure is listed on the UMCES website at MyUMCES under IACUC Animal Care and Use Policies found at [http://www.umces.edu/about/myUMCES](http://www.umces.edu/about/myUMCES), and entitled “How to Report Animal Welfare Concerns”. This information is also posted at each laboratory entrance and on State/Federal bulletin board posting areas at each site.

5. Make written recommendations to the IO regarding any aspect of the Institution's animal program, facilities, or personnel training. The procedures for making recommendations to the IO are as follows:

The IACUC makes recommendations to the UMCES President (IO) via its Semi-annual Report. The report includes: the results of the facility site inspections for the prior six months; a listing of any deficiencies on the inspection forms for each laboratory facility (AL, HPL, or CBL); who was contacted about the deficiency; what suggestions were made for correcting any deficiency; and when the deficiency was resolved. A report from the respective laboratory to the Chair via email or letter describing the resolution of the deficiency is then included in the Semi-annual Report to the UMCES President (IO). During the Semi-annual Meeting, IACUC members may bring up topics for discussion concerning policies, facilities, site inspections and deficiencies (minor or major), protocols, and personnel training. We vote on recommendations when warranted and include our recommendations to the UMCES President (IO) in the Semi-annual Report.

6. In accord with the PHS Policy IV.C.1-3, the IACUC shall review and approve, require modifications in (to secure approval), or withhold approval of PHS-supported activities related to the care and use of animals. The IACUC procedures for protocol review are as follows:

Since the Committee members are physically located hundreds of miles apart on the Western and Eastern shores of Maryland and in western Maryland, we use a secure open-source management system (MOODLE software package) that facilitates posting, reviewing, and approving of research protocols and discussions about protocols among Committee members. MOODLE remains on the UMCES Chesapeake Biological Laboratory’s secure website and only the Committee members have access to the IACUC portion of this site.
The review process begins when the PI sends a written protocol to the Chair of IACUC via email attachment and a hard copy via regular mail with original signatures on it. This hard copy is kept in the file permanently. The Chair pre-reviews the protocol to make sure the PI has submitted a complete protocol. Once this is done, the protocol is uploaded to MOODLE as an Adobe Acrobat pdf file, and a designated review is requested by contacting all IACUC members via MOODLE. The Committee is thereby notified that a protocol(s) has been posted for review, are appointed Designated Reviewers by the Chair, and are given a deadline date of four (4) weeks past the submission date. Committee members may approve or require modifications to secure approval. Every member sees the comments of all other members and examines each subsequent revision. Every IACUC member must approve the final version of the protocol. There is no majority rule. Any member of the IACUC can also call for a committee meeting to discuss a protocol; the IACUC then meets via IVN and the IACUC can withhold approval or defer review of a protocol. The Chair then writes a letter informing the PI of any concerns, questions, or decision of the IACUC, who is instructed to provide any information needed to complete the review within two (2) weeks or asked to revise and resubmit the protocol for review.

The PI’s reply is then uploaded to MOODLE and the Committee is asked to review the additional information and approve or require modifications to secure approval. Once all Committee members have approved the protocol, and after a final check of the protocol by the Chair and Veterinarian, an approval letter is written to the PI from the Chair with an assigned protocol number. This packet includes a “Change” letter (for future changes before the protocol expires) and a Public Health Service Policy on Humane Care and Use of Laboratory Animals, 2002” booklet along with “What Investigators Need to Know About the Care and Use of Laboratory Animals, NIH Pub No. 06-6009” as a guide for each PI.

Meeting Attendance/Voting: A quorum of 50%+1 is required in order to hold a meeting. Meetings are held via IVN. A majority is required for voting on items brought before the IACUC.

Designated Reviewer: Our entire Committee functions as designated reviewers when reviewing protocols.

The Chair of the Committee often submits protocols for approval and declines from doing his own review because of a conflict of interest. His protocol is then presented to the IACUC for review and treated as a regular protocol review. At these times, a scientist member of the Committee is appointed to function as “Acting Chair” during the review process.

7. Review and approve, require modifications in (to secure approval), or withhold approval of proposed significant changes regarding the use of animals in ongoing activities as set forth in the PHS Policy IV.C. The IACUC procedures for reviewing proposed significant changes in ongoing research projects are as follows:

Proposed Significant Changes: During the original assignment of a protocol number, a “Change” letter is included in the letter packet sent to the PI. This “Change” letter allows the PI to notify the IACUC of any changes during the three-year duration of the protocol. The IACUC Committee refers to the table used for determining minor or significant changes that is found in
Table 10.1 from The IACUC Handbook (2001). Edited by Jerald Silverman, Mark A. Suckow, and Sreekant Murthy. The change could be minor or significant. If the change is minor, such as adding a student, it can be requested through the “Change” letter and the change will be made and a review is not needed. If it is a significant change, such as change in number(s) of animals, species, etc., the PI will be requested to submit a new protocol with changes explained and included. All significant changes go through the IACUC as a regular review over MOODLE and must be approved by the Committee. The IACUC assigned protocol number will stay the same with the revision noted via letter to the PI and a copy put in the permanent file.

8. Notify investigators and the Institution in writing of its decision to approve or withhold approval of those activities related to the care and use of animals, or of modifications required to secure IACUC approval as set forth in the PHS Policy IV.C.4. The IACUC procedures to notify investigators and the Institution of its decisions regarding protocol review are as follows:

Notifying the PI: If modifications are required, the IACUC Chair writes a letter listing concerns/questions to the PI, who is given two weeks to reply with an answer. This reply is uploaded to MOODLE and the Committee, as designated reviewers, is asked to review the answers and approve or require modifications to secure approval of the protocol. Once all reviews are in, if approved, a letter is written to the PI from the Chair with an assigned protocol number. This packet includes a “Change” letter (for future changes before the protocol is expired) and a “Public Health Service Policy on Humane Care and Use of Laboratory Animals” booklet is included as a guide for each PI along with the brochure “What Investigators Need to Know About the Care and Use of Laboratory Animals”, NIH Pub. No. 06-6009.

Notifying the Institution: The approval letters are sent to the UMCES Grants Officer. This is to notify the Grants Officer that the protocol has been approved by the IACUC and a number assigned. The Grants Officer can then attach the number/letter to the grant and notify the granting agency that a protocol has been received and officially approved. The Grants Officer oversees all protocols for grants. These letters are also sent to the Safety Officers of each respective laboratory for their records.

9. Conduct continuing review of each previously approved, ongoing activity covered by PHS Policy at appropriate intervals as determined by the IACUC, including a complete review in accordance with the PHS Policy IV.C.1-4 at least once every three years. The IACUC procedures for conducting continuing reviews are as follows:

Annual Review: The IACUC Chair sends a letter of inquiry to the PI on an annual basis, during the duration of the protocol, asking the PI to indicate 1) if there are no changes, 2) if changes, whether they are minor or significant, or 3) if the project been completed. If there are significant changes, then a new protocol must be submitted and approved by the IACUC. All information is recorded and filed from the first through the third year.

Three-year Review: The IACUC performs a complete De Novo review every three years at protocol expiration. At this time, 90-60-30-day notification letters are mailed to the PI that begins 90 days before the protocol expires. This is to allow enough time for the PI to complete a
new protocol, if needed, or terminate the project. The IACUC requires the PI to provide information on the status of the study protocol to date. If the PI plans to continue the protocol beyond three years, the IACUC requires that a “new” or “De Novo” protocol be submitted along with a brief report telling the Committee of the progress that has been made thus far. This De Novo review gives the PI the opportunity to modify and incorporate any changes in methodology or improvements in techniques, which is otherwise not permitted to be introduced in a current protocol without submitting a modification. The De Novo protocol and report is then uploaded to the MOODLE website and the Committee members are thereby notified that a protocol(s) has been posted for review, are appointed Designated Reviewers by the Chair, and are asked to review the De Novo protocol before the expiration date. Committee members may approve or require modifications to secure approval. The PI is notified of any questions, concerns, or modifications emanating from the IACUC and is asked to respond to them before approval of the protocol. When the new three-year protocol is approved by the IACUC, a new protocol number is then assigned to it. If further questions arise, any member can ask for a meeting of the IACUC via IVN to discuss the protocol and, with a quorum present, could vote not to approve the protocol. If not approved, a letter will be sent to the PI stating why it was not approved. The PI would then revise the protocol and resubmit it for review.

10. Be authorized to suspend an activity involving animals as set forth in the PHS Policy IV.C.6. The IACUC procedures for suspending an ongoing activity are as follows:

Any individual may bring or relay any concerns involving the care and use of animals at the Institution to the President (IO) or to a Laboratory Director or to the IACUC Chair, Veterinarian, or any member of the IACUC. Such concerns may be raised in confidence. Upon the recommendation of the Veterinarian or as the result of majority vote of its IACUC members at a convened meeting with a quorum (not electronic discussion), the IACUC is authorized to suspend any activity involving animals. The Chair may also temporarily suspend any such activity under emergency circumstances pending further examination by the IACUC, which will decide whether to continue the suspension or to permit the activity to resume. Suspension of any activity must be justified in writing to the President (IO) of the Institution within twenty-four hours. The IO, in consultation with the IACUC, shall review the reasons for suspension, take appropriate corrective action, and report that action with a full explanation to OLAW.

E. The occupational health and safety program (OH&S) for personnel working in laboratory animal facilities or those that have frequent contact with animals is as follows:

The Institution’s OH&S program is reviewed during the annual training class held over the IVN. It covers hazardous risks, personnel training, personal protective equipment, chemicals and euthanasia procedures, vertebrate monitoring before and after procedures, field studies, zoonotic diseases, facilities, vaccinations, and husbandry. All personnel having knowledge of being pregnant or having a chronic illness or an immunodeficiency disorder should explain their job situation to their Occupational Health Professional, who can assess the risks and make recommendations concerning their health and safety.

1. At the time of hire, new personnel will be asked for documentation of a tetanus/diphtheria vaccination or booster within the past 10 years and of a tuberculin skin test. If
documentation is not available, a new hire will be asked to have a routine physical examination to include the tetanus/diphtheria vaccination/booster and tuberculin skin test no later than three months after health benefits become active. All employees who work with animals will be expected to have a tetanus/diphtheria booster every 10 years and a tuberculin skin test every two years.

2. Protective clothing, including uniforms, gowns, sleeve extenders, rubber boots, caps, masks, gloves, safety glasses, and respirators are provided for use in activities that involve vertebrate animals whenever required by the work assignment.

3. The Vice President for Administration, through the Office of Human Resources, monitors the UMCES Occupational Health Program. Accidents and wounds are reported to the appropriate Laboratory Health Officer and, if deemed to warrant professional attention, the individual is sent to a health care provider for treatment. Any such referrals are reported to the UMCES Office of Human Resources.

4. Animal care and use protocols involving the use of hazardous agents (pathogens, carcinogens, other hazardous chemicals, recombinant, or radioisotopes) must be reviewed and approved by the appropriate Laboratory Safety Committee and the IACUC before the activity can be initiated. The UMCES Office of Sponsored Programs and the PI(s) are informed of approvals that involve research proposals. The UMCES Radiation Safety Officer monitors all areas where radioisotopes are used, disposed of, and/or stored. Each Laboratory Safety Officer monitors the use, storage, and disposal of other hazardous materials.

5. The institutional training program also known as, “IACUC Class Training” includes information on zoonoses, personal hygiene, use of hazardous materials, and other considerations regarding occupational health and safety practices that relate to activities involving the care and use of vertebrate animals at UMCES. Personnel must be fully trained in both the care and use of animals and in the use of hazardous materials before they will be permitted to undertake such activities.

6. Eating, drinking, and smoking are strictly prohibited in areas where vertebrate animals are being kept or used. Smoking is prohibited in all state buildings and vehicles owned and operated by the state. Signs to this effect are prominently posted in all such areas.

F. The total gross number of square feet in each animal facility (including each satellite facility), the species of animals housed therein, and the average daily inventory of animals by species in each facility is provided in the attached Facility and Species Inventory table.

See attachment.

G. The training or instruction available to scientists, animal technicians, and other personnel involved in animal care, treatment, or use is as follows:
Training: A notice is submitted quarterly to all employees of UMCES (AL, CBL, and HPL) stating that if they have need for a protocol, then they must take the IACUC Training Class if they have not done so. They apply via email notifying the IACUC Assistant that they need the class. This class is announced via email one month before the time of the class. The class is held over the IVN, which allows for all people within UMCES to access the class in real time. The class training is held annually, but if a need arises for training at another time during the year, the class is repeated. The class training consists of General Information, including OSHA instruction; Fishes, Amphibians and Reptiles; and Field Studies. We cover the three Rs, refinement, reduction, and replacement, to insure that vertebrate research protocols keep pain and distress to a minimum, that numbers are only sufficient to answer the research question, and that non-animal (particularly non-vertebrate) models have been considered by the PI. As new techniques arise of which IACUC is aware or that are listed in a new protocol, the IACUC requires that the PI demonstrate proficiency in the practice. If proficiency cannot be demonstrated, the IACUC via the Chair requires that training be sought by the PI and be completed to its satisfaction before proceeding with the practice. The IACUC can delay approval of a protocol until the required training is complete. The IACUC keeps abreast of changes in practices and regulations via periodicals and publications, the OLAW website, various guides from professional societies, and communication with other institutions. These changes are made known to UMCES employees via IACUC training and emails from the IACUC Assistant and IACUC members.

Training for IACUC Members: New IACUC members are mentored by current members on the issues faced by the IACUC; members have attended IACUC workshops and conferences offered by OLAW. All IACUC members are encouraged to go to the training sessions of OLAW on an "if/when" basis as budgets permit.

IV. INSTITUTIONAL PROGRAM EVALUATION AND ACCREDITATION

All of this Institution's programs and facilities (including satellite facilities) for activities involving animals have been evaluated by the IACUC within the past six months and will be re-evaluated by the IACUC at least once every six months thereafter, in accord with the PHS Policy IV.B.1-2. Reports have been and will continue to be prepared in accord with the PHS Policy IV.B.3. All IACUC Semi-annual Reports will include a description of the nature and extent of this Institution's adherence to the "Guide." Any departures from the "Guide" will be identified specifically and reasons for each departure will be stated. Reports will distinguish significant deficiencies from minor deficiencies. Where program or facility deficiencies are noted, reports will contain a reasonable and specific plan and schedule for correcting each deficiency. Semi-annual Reports of the IACUC's evaluations will be submitted to the IO. Semi-annual Reports of IACUC evaluations will be maintained by this Institution and made available to OLAW upon request.

This Institution is Category Two (2) – not accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC). As noted above, reports of the IACUC's semi-annual evaluations (program reviews and facility inspections) will be made available upon request. The report of the most recent evaluations (program review and facility inspection) is attached.
V. RECORD KEEPING REQUIREMENTS

A. This Institution will maintain for at least three years:

1. A copy of this Assurance and any modifications thereto, as approved by the PHS.

2. Minutes of IACUC meetings, including records of attendance, activities of the committee, and committee deliberations.

3. Records of applications, proposals, and proposed significant changes in the care and use of animals and whether IACUC approval was given or withheld.

4. Records of IACUC Semi-annual Reports and recommendations (including minority views) as forwarded to the IO, Dr. Donald F. Boesch, President.

5. Records of accrediting body determinations.

B. This Institution will maintain records that relate directly to applications, proposals, and proposed changes in ongoing activities reviewed and approved by the IACUC for the duration of the activity and for an additional three years after completion of the activity.

C. All records shall be accessible for inspection and copying by authorized OLAW or other PHS representatives at reasonable times and in a reasonable manner.

VI. REPORTING REQUIREMENTS

A. This Institution’s reporting period is January 1 – December 31. The IACUC, through the IO, will submit an Annual Report to OLAW on January 31 of each year. The report will include:

1. Any change in the accreditation status of the Institution (e.g., if the Institution obtains accreditation by AAALAC or AAALAC accreditation is revoked), any change in the description of the Institution’s program for animal care and use as described in this Assurance, or any change in the IACUC membership. If there are no changes to report, this Institution will provide written notification that there are no changes.

2. Notification of the dates that the IACUC conducted its semi-annual evaluations of the Institution’s program and facilities (including satellite facilities) and submitted the evaluations to the IO, Dr. Donald F. Boesch, President.

B. The IACUC, through the IO, will promptly provide OLAW with a full explanation of the circumstances and actions taken with respect to:

1. Any serious or continuing noncompliance with the PHS Policy.

2. Any serious deviations from the provisions of the “Guide.”
3. Any suspension of an activity by the IACUC.

C. Reports filed under sections VI.A. and VI.B. of this document shall include any minority views filed by members of the IACUC.
VII. INSTITUTIONAL ENDORSEMENT AND PHS APPROVAL

A. Authorized Institutional Official

Name: Dr. Donald F. Boesch
Title: President

Name of Institution: University of Maryland Center for Environmental Science
Address: 2020 Horns Point Road, P.O. Box 775, Cambridge, MD 21613
Phone: 410-221-2001
Fax: 410-228-3843
E-mail: boesch@umces.edu
Signature:
Date: March 18, 2011

B. PHS Approving Official

Dr. Brent C. Morse-Animal Welfare Program Specialist
Office of Laboratory Animal Welfare
National Institutes of Health
6705 Rockledge Drive
RKLL, Suite 360, MSC 7982
Bethesda, MD 20892-7982
Phone: 301-594-2921
Fax: 301-915-9472
Email: morseb@mail.nih.gov
Signature:
Date: 8/3/11

C. Effective Date of Assurance: 8/3/2011
D. Expiration Date of Assurance: 8/31/2015
President of UMCES (Institutional Official)

Institutional Animal Care and Use Committee
Chair:
UMCES AL representative
Veterinarian
Practicing Scientists:
UMCES AL representative
UMCES CBL representative
UMCES HPL representative
Non-Affiliated Member
Non-Scientist

Vice President for Administration

Office of Sponsored Programs

Director Appalachian Laboratory
AL Animal Facilities

Director Chesapeake Laboratory
CBL Animal Facilities

Director Horn Point Laboratory
HPL Animal Facilities

Figure 1. Lines of authority for administering institutional program for animal care and use at UMCES.
<table>
<thead>
<tr>
<th>Laboratory, Unit, or Building*</th>
<th>Gross Square Feet (including service areas)</th>
<th>Species Housed in Unit (use complete common names)</th>
<th>Approx. Average Daily Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL - No vertebrares</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CBL - Visitor Center</td>
<td>~ 1200</td>
<td>Striped Killfish</td>
<td>10</td>
</tr>
<tr>
<td>CBL - Visitor Center</td>
<td>~ 1200</td>
<td>Atlantic Silverside</td>
<td>1</td>
</tr>
<tr>
<td>CBL - Visitor Center</td>
<td>~ 1200</td>
<td>Feathery Blenny</td>
<td>3</td>
</tr>
<tr>
<td>CBL - Visitor Center</td>
<td>~ 1200</td>
<td>Spot</td>
<td>2</td>
</tr>
<tr>
<td>CBL – Cronin FRC Bay 1</td>
<td>~ 400</td>
<td>Red eared slider turtles - juvenile</td>
<td>180</td>
</tr>
<tr>
<td>CBL – Cronin FRC TC room 1</td>
<td>~ 100</td>
<td>Snapping turtles - juvenile</td>
<td>80</td>
</tr>
<tr>
<td>HPL, Fish Hatchery</td>
<td>8947 ft² (15- 8ft tanks, 13- 6ft tanks, 9- 4ft tanks, 36-2ft tanks, 1- 12 tank, 1- 20ft tank)</td>
<td>Diamondback terrapins</td>
<td>6</td>
</tr>
<tr>
<td>HPL, Fish Hatchery</td>
<td>&quot;</td>
<td>White perch</td>
<td>4</td>
</tr>
<tr>
<td>HPL, Fish Hatchery</td>
<td>&quot;</td>
<td>Canadian Atlantic Sturgeon YC2010</td>
<td>50</td>
</tr>
<tr>
<td>HPL, Fish Hatchery</td>
<td>&quot;</td>
<td>Wild caught Atlantic Sturgeon</td>
<td>25</td>
</tr>
<tr>
<td>HPL, Fish Hatchery</td>
<td>&quot;</td>
<td>Canadian Atlantic Sturgeon YC2013</td>
<td>3244</td>
</tr>
<tr>
<td>HPL, Fish Hatchery</td>
<td>&quot;</td>
<td>Canadian Atlantic Sturgeon YC2011</td>
<td>75</td>
</tr>
<tr>
<td>HPL, Fish Hatchery</td>
<td>&quot;</td>
<td>Catfish</td>
<td>150</td>
</tr>
<tr>
<td>HPL, Fish Hatchery</td>
<td>&quot;</td>
<td>Striped bass</td>
<td>15</td>
</tr>
<tr>
<td>HPL Earthen Ponds</td>
<td>87,120 (4 ponds, ½ acre ea)</td>
<td>Striped bass</td>
<td>500</td>
</tr>
</tbody>
</table>