

Environmental Biology Master's Internship ENV 591/ENV 591G

I. Requirements

- 1. The student initiates the process by meeting the following requirements:
 - a. Completing at least 21 credits of coursework toward the degree.
 - b. Completing both statistics courses (ENV 505 & 515) as part of the above 21 credits.
 - c. Holding a GPA of 3.0 or greater in the ENV program.
- 2. Working in conjunction with a Hood ENV faculty member, the student arranges the details of the internship. This includes:
 - a. Identifying and confirming the organization/site of the internship and an on-site advisor.
 - b. Identifying the start and end dates of the internship.
 - c. Establishing a schedule that totals **a minimum of 180 hours** of on-site internship participation.
- 3. In collaboration with the on-site and faculty advisors, the student establishes a plan of work that includes a significant project to be solely completed by the student.
- 4. The student submits an **Internship Prospectus.** The Prospectus must be approved by both advisors and the ENV Program Director, as indicated by their electronic signatures on the document and/or email confirmation. Enrollment in ENV 591/ENV 591G cannot occur without an approved Prospectus.
- 5. During the course of the internship:
 - a. The student maintains a weekly log and journal of internship activities.
 - b. The student corresponds monthly via email with their Hood faculty advisor and submits the current internship log.
 - c. The faculty and on-site advisors communicate at least two times (at the half-way point and end of internship) to evaluate the progress of the intern. This communication is initiated by the Hood advisor.
- 6. To complete the internship, the student must submit the following to their faculty advisor for evaluation:
 - a. The completed weekly journal and log.
 - b. The final internship project/results summarized as a scholarly paper.

II. Sequence of the Internship Process

- 1. Locate an internship on-site advisor (this will be someone at the park/preserve/lab who plans to supervise your 180 hrs of internship work).
- 2. Come up with 2-4 possible project ideas for your internship. Although you can complete a series of tasks for your on-site advisor, you should have a small, independent, ENV-themed project that involves data collection and analysis, which will also simultaneously benefit your internship site. A list of past intern projects and sites is on pp. 3-4.
- 3. Summarize those ideas and e-mail them to your Hood internship advisor; be sure to cc your on-site advisor as well. Note that your Hood advisor may be your academic advisor or, even better, a faculty member with expertise that relates to your internship project.
- 4. After your Hood advisor approves an idea, develop a prospectus with the assistance of your on-site advisor. This prospectus (~5-10 pages) should detail the objectives and duties of the internship. It should also describe, in detail with relevant background research provided*, the project to be completed by the student, including a timeline. See samples of the cover page (p. 5) and references cited page (p. 6).
- 5. Once your on-site advisor and you both feel that the draft prospectus is at its best, forward the file to your Hood advisor for feedback and approval.
- 6. After your on-site and Hood advisors BOTH approve the final draft prospectus, forward it to the ENV Program Director for final approval.
- 7. With the ENV Director's approval, register for ENV 591/ENV 591G. This will require the completion and submission of a "Permission to Enroll" form from the Graduate School.
- 8. Once enrolled in ENV 591/ENV 591G (3 credits), complete 180 hrs and the approved project—this can usually be done in 1-2 semesters, depending on the frequency of site visits. A student who does not complete the internship after one semester will be rolled over as In Progress ("IP") each semester until the requirements are completed. The fee for the 3 credits is only paid once at the original registration date. If "IP" status occurs for this course in any given semester, the student only pays Hood's comprehensive fee.
- 9. Upon completion of the project, write up the summary/findings in scientific format.* If you are not familiar with scientific report writing, please refer to the ENV 579 guidelines for information about what should be in each section of your report.
- 10. Once your on-site advisor and you both feel that the final document is at its best, forward the file to your Hood advisor for feedback and approval. Also send your completed time-log, documenting 180 hours of project work, to your advisor.
- 11. After your on-site and Hood advisors BOTH approve the final document, forward it to the ENV Program Director for approval. The Director will confirm with the Hood advisor that the 180 hour requirement has been met.
- 12. With the ENV Director's approval, a student's final grade for ENV 591 (S/U) will be entered in consultation with the internship advisors

* Any information in your proposal or final document that is used/learned from a source should be cited in the text. Follow a consistent format from one particular journal that is chosen by your adviser and is appropriate to the sub-discipline of your research. A Name-Year format well or you could use the numbered format if that corresponds to the format of the journal that you have chosen; the numbered format is also useful if many of your sources are government/public documents with unclear or organizational authorship. The Hood College library website gives information on citing sources, including instructions on how to use a reference manage like Zotero. Using a reference manager is highly recommended, especially if you have a lot of sources, to ensure consistency in formatting and correspondence between all of your in-text citations and the references listed in your proposal and final document.

Chalk and Wire Assessment of ENV 591/591G Documents

To help the ENV program assess that we are meeting the outcomes we have set for our students, it is requested that you upload the <u>first draft of your prospectus</u> and the <u>first draft of your final report</u> to Blackboard; your advisor will set up separate links for each of these submissions via the "ENV 591" site that you see in your Blackboard home page. This will be very much like submitting an assignment for one of your courses, except that this will in no way impact you, your grades, or your outcome in the program. Just a few clicks on your part to upload these documents will be of immense help to the ENV program as we continuously aim to configure our courses and curriculum in ways to be most beneficial to students in environmental biology.

III. Sample of Past Internship Project Titles

- Effectiveness of specific soil treatments to increase nutrients on an organic hayfield at Fox Haven Organic Farm
- Identification of potential wetland habitats throughout the C & O Canal National Historical Park
- Observational study of saprobic and ectomycorrhizal macrofungi growing around slash piles on a 15 year old Douglas-Fir tree farm located in the Willamette Valley
- Winter survey and control of the invasive species Elaeagnus spp., Lonicera spp., and Maclura pomifera along the Sensory Trail at Catoctin Creek Park and Nature Center in Middletown, MD.
- Emerald Ash Borer Management Plan for the Chesapeake & Ohio Canal National Historical Park
- Evaluating the influence of three streams with varying levels of associated land development on Little Seneca Lake in Boyds, Maryland, and developing sampling and evaluation techniques for ongoing monitoring by secondary science students
- Evaluating the effectiveness of herbicide treatment on non-native Ailanthus altissima within the Monocacy Battlefield National Park in Frederick, Maryland
- Lamb's Knoll Owl Banding Project
- Developing protocols for water quality mapping for Frederick County Health Department using ArcMap GIS
- Analysis of the efficacy of the combination of spraying and pulling of invasive Oplismenus undulatifolius (wavyleaf basketgrass) in Little Paint Branch Park

- Evaluating prey delivery and land-use classes within the habitat of a nesting bald eagle pair (Haliaeetus leucocophalus) using remote technology at the National Conservation Training Center
- Monitoring the ecological integrity of a historically disturbed wetland: Integration of quality assessment metrics with amphibian indices of biological integrity

Past ENV Internship Sites

Audrey Carroll Audubon Sanctuary Mt. Airy, MD

Belle Prairie Farm Big Pool, MD

Center for Coastal and Watershed Studies Hood College

City of Charles Town Charles Town, WV

Dept. of Energy Washington, DC

Federal Energy Regulatory Commission Washington, DC

Fish and Wildlife Service

National Conservation Training Center Shepherdstown, WV

Directorate Resource Assistant Fellows Program (DFP): http://www.fws.gov/workforwildlife/

Fountain Rock Park & Nature Center Walkersville, MD

Fox Haven Farm Jefferson, MD

Fred Archibald Audubon Sanctuary New Market, MD

Frederick County Division of Parks and Recreation Middletown, MD

Maryland Dept. of Natural Resources

Middle Patuxent Environmental Area Columbia, MD

NASA DEVELOP program http://develop.larc.nasa.gov/

National Park Service

C&O Canal National Historical Park Hagerstown, MD

Monocacy Battlefield National Park Frederick, MD

IV. Sample Project Prospectus Cover Page

M.S. Environmental Biology Internship Project Proposal

Evaluating the effectiveness of herbicide treatment on non-native *Ailanthus altissima* within the

Monocacy Battlefield National Park in Frederick, Maryland

Submitted By

XXXXX

XXXXX
Internship Supervisor
Acting Superintendent
Natural Resources Program Manager, Monocacy National Battlefield

XXXXX Hood Internship Advisor

DEPARTMENT OF BIOLOGY

HOOD COLLEGE

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REFERENCES CITED

ASAP: systematic annotation package for community analysis of genomes [Internet]. 2013. Madison (WI): University of Wisconsin-Madison; [cited 2013 Sep 12]. Available from http://www.genome.wisc.edu/tools/asap.htm

Internet resource

Bechinher C, Sciortino F, Ziherl P. 2013. Physics of complex colloids. Washington (DC): IOS Press; [accessed 2015 Aug 27]. https://ebookcentral.proquest.com/lib/hoodebooks/reader.action?ppg=3&docID=1441803&tm=1496853977000.

E-book

Boyd A, Glaser R. 1987. Mapping EBV early antigens in human cells after microinjection of subgenomic DNA clones. In: Levine P, Glaser R, editors. Epstein-Barr and Human Diseases. Clifton, NJ: Humana Press. p 145-149.

Section of a Print Book

Chiuchiolo AL, Dickhut RM, Cochran MA, Ducklow HW. 2004. Persistent organic pollutants at the base of the Antarctic marine food web. Environ Sci Technol [accessed 2006 Sep 5]; 38(13):3551-3557. http://pubs.acs.org/doi/full/10.1021/es0351793.

Journal Article online

O'Brien SJ, Joslin P, Smith GL, Wolfe R, Shaffer N, Heath E, Ott-Joslin J, Rawal PP, Bhatterachajee KK, Martenson JS. 1987a. Evidence for African origins of founders of the Asiatic lion species survival plan. Zoo Biol 6:99-116.

Journal Articles print

- O'Brien SJ, Martenson JS, Packer C, Herbst L, Devos L, Joslin P, Ott-Joslin J, Wildt D, Bush M. 1987b. Biochemical genetic variation in geographic isolates of African and Asian lions. Natl. Geog Res 3:114-124.
- Rossi AMK, Hirschhorn RR. 1991. Expression of growth-regulated genes in normal and SV40-transformed hamster fibroblasts. J Cell Biochem 47:165-173.
- Vessey SH, Meikle DB. 1984. Free-living rhesus monkeys: Adult male interactions with infants and juveniles. In: Taub D, editor. Primate Paternalism. New York: Van Nostrand Reinhold Company, Inc. p 113-126.
- White J, Boyd AL, Carter S, Ozer H. 1992. Cooperativity of SV40 T antigen and RAS in progressive stages of transformation of human fibroblasts. Exp Cell Res 203:157-163.
- Working Group on Diversity in the Biomedical Research Workforce (US). 2012. Draft report diversity in the biomedical research workforce [Internet]. Bethesda (MD):

 National Institutes of Health (US); [cited 2013 Sep 12]. Available from http://acd.od.nih.gov/Diversity%20in%20the%20Biomedical%20Research%20Workforce
 %20Report.pdf