Students are encouraged to seek out research experience while pursuing their undergraduate degree. Students desiring a research experience should review the list of faculty research projects provided below and see what opportunities are available. Students must contact faculty directly to express their interest and get more information. Students may earn academic credit for their research experience.

The following faculty members are eager to work with undergraduate students majoring in environmental disciplines who want practical research experience, integrating basic and applied science working towards solutions to real world problems facing our environment.

**Basic Instructions:**

1) Student should review list of available projects below, and then contact faculty members directly (or other individual listed) to learn more about project expectations and qualifications (if any) that are needed. Mark your subject line of your email as “Undergrad Research Inquiry” and in your email provide the following information:

* Student name, class year, GPA, list of any relevant course work completed, number of hours available to work on project each week; specific skills/experience/training required for the project.

2) **Priority deadline for applications is Friday, September 8th.** Faculty will contact qualified students to arrange for interviews as appropriate. Selection of interns (for most projects) will occur by Friday, September 15th.

2) To earn academic credit, an ENVSCI Independent Study contract must be completed and signed by both the student and the sponsoring faculty member. This form is available on-line at [http://eco.umass.edu/wpcontent/uploads/2011/11/ENVSCI_IndepStudyForm_fields.pdf](http://eco.umass.edu/wpcontent/uploads/2011/11/ENVSCI_IndepStudyForm_fields.pdf)

3) Instructions for completing the form are provided on-line within the same document link. Be sure to indicate the number of credits being earned for the research experience.

4) Please note that all Independent Study projects (ENVRSCI 296, 396, 496) **must be letter graded**. Student can choose to enroll in Internship/Practicum credits (ENVRSCI 298, 398, 498), but these courses are mandatory Pass/Fail.

5) **The completed Independent Study Contract must be delivered to the ENVSCI Program Office at 310 Holdsworth Hall prior to the close of the Add/Drop period.**

(If form is received after the end of the Add/Drop period, the ENVSCI Office will initiate the paperwork for a Late Add request, and the student will be required to hand-carry this paperwork across campus for the necessary approval signatures.)

**SEE LIST OF FACULTY RESEARCH INTERESTS BEGINS ON NEXT PAGE.**
~ Environmental Research Opportunities ~ Fall 2017 ~

**Alison Bates, Lecturer**  
Environmental Conservation  
209 Holdsworth Hall, 413-545-1768  
awbates@eco.umass.edu

**Renewable Energy Research**

**Description:** Student(s) will analyze a number of publicly available documents and interview transcripts to develop a database on public perceptions of renewable energy - namely offshore wind and tidal energy. Students will specifically examine environmental costs and benefits of energy technologies. The work is flexible and collaborative with other undergraduate students.

**Qualifications:** recommended coursework or knowledge in basic renewable energy types, strong organization skills, data entry, attention to detail.

**Time commitment:** Flexible. 3-10 hours per week. Possible to continue project into Spring term.

**Compensation:** Academic credit (1-3). Graded independent study or pass/fail practicum credits depending on project involvement and completion of a final project.

**Forrest Bowlick, Lecturer**  
Geosciences & Environmental Conservation  
Morrill Science Center IV Room #260, (413)-577-3816  
fbowlick@umass.edu

**Geographic Information Science**

**Project Description:** The EnGaGE research group is seeking students interested in exploring trends and patterns in Environmental, Geographic, and GIS Education, specifically investigating how GIS skills are taught, and how GIS is practiced, within these complementary fields. Geographic Information Science (GIS) encompasses a diverse set of skills and abilities, yet what those abilities are, and how they interrelate in academic instruction and professional practice, remains under-explored. Students working on this project will explore and analyze GIS course offerings and curricula to examine professional practice. Based on the skills, professional realms, or topics of interest, students will explore existing academic work, discover professional practice, and propose ways to bridge the two. Students will practice content analysis, build a familiarity with the nature of GIS practice, and have opportunities to write scientific papers or GIS educational materials, among other research opportunities.

**Qualifications:** GIS experience preferred but not required (potential to learn on the project); Excel experience a plus (but not required).

**Time Commitment:** Flexible based on student need, regular hours and products to be discussed on a by-student basis.

**Compensation:** Academic credits. Three hours per week per credit. Independent Study (graded) or Practicum (mandatory pass/fail).

**Duration:** Possible (and preferable) to extend project into Spring semester.

**Contact** Professor Bowlick with your interest: fbowlick@umass.edu

Faculty Research Interests. Updated September 2017.
Bethany Bradley, Associate Professor                                               Spatial Ecology
Environmental Conservation
318 Holdsworth Hall, 413-545-1764

Title: Global Invaders Project

Description: Invasive species reduce biodiversity and are considered a major threat to ecosystems worldwide. Despite general knowledge of their widespread impacts, we still lack a consistent list of which species are invasive, where they have been studied, and what sorts of specific impacts have been identified. This information is critical for understanding the conditions that lead to invasion and informing effective monitoring and management. Students joining this project will have the opportunity to contribute to a multi-year effort in the Spatial Ecology Lab, which is compiling a comprehensive global database of invasive plants (“the Global Invaders Project”). Students will gain experience reading scientific literature in invasion ecology and will participate in weekly lab group meetings to learn about cutting edge research on invasive plants.

Duties/Qualifications: For the Fall 2017 semester, we seek 4 students to join our ongoing project. Duties will include reading peer-reviewed literature and extracting information outlined in an existing database. No previous experience is needed, but good organization skills and attention to detail are important.

Students participating in this project will gain experience in efficiently reviewing scientific literature, as well as data collection – skills that are invaluable for those looking to continue scientific research beyond their undergraduate academic career. Participants will also acquire knowledge in invasive species ecology. Students are also encouraged to attend weekly lab discussions to learn more about ongoing research projects.

Compensation: This is a 3-credit independent study position (9 hours/week).

Contact: Interested students should email a transcript (unofficial), resume and a brief description of why they are interested in the project (<100 words) to Brittany Laginhas (PhD student) (blaginhas@cns.umass.edu).

Holly Goyert, Post-doctoral Research Associate                Conservation Biology
Mass Cooperative Fish & Wildlife Research Unit
Environmental Conservation

Description: We are conducting a stakeholder-driven literature review of the importance of sandlance (Ammodytes spp) to the ecosystem of the Northwest Atlantic Ocean. We request an undergraduate to assist in synthesizing a section covering the relationship between this important forage fish and several protected marine bird species (e.g., terns, puffins, etc.). The project will involve summarizing various papers in the primary scientific literature that outline studies on sand lance in the diet of seabirds.

Qualifications: good writing skills and an ability to synthesize a literature review in a concise, coherent manner (a writing sample may be requested). No prerequisites required, but an interest in fisheries, wildlife, ecology and conservation preferred.

Time commitment: minimum 3 hours expected to be spent by student each week.

Compensation available: independent study (graded project) or practicum (Pass/Fail) credits. Three hours per week required for each credit.
It may be possible to extend the project through the Spring 2018 semester (but such a commitment is not required in advance).

Faculty Research Interests. Updated September 2017.
Scott Jackson, Extension Assistant Professor                         Extension/ Outreach
Environmental Conservation                         sjackson@umext.umass.edu
328 Holdsworth Hall, 413-545-4743

Climate Change Adaptation and Outreach

Description: Seeking two undergraduate students to assist with different aspects of a climate adaptation project.

1) Assisting with building a community/network of climate adaptation practitioners and researchers, and planning a one-day conference to bring together climate adaptation practitioners and researchers working on natural resources conservation in Massachusetts.

2) Assisting with updates to the Massachusetts Wildlife Climate Action Tool website and any associated collaboration with the Massachusetts climate science clearinghouse website.

This is an exciting time as climate adaptation initiatives in Massachusetts are dynamic and burgeoning. We are ideally seeking students who enjoy brainstorming, encouraging collaborations, and planning websites/online platforms.

Qualifications: Must have excellent communication skills. Familiarity with databases and website development is preferred for that project.

Time commitment: 3-10 hours per week depending on the student's interest and availability. We would be happy to have a student continue working on these projects through Spring 2018 semester, but this is not required.

Compensation: independent study credits (graded project only) or practicum credits (Pass/Fail). Three hours per week needed for every academic credit earned.

Contact: Melissa Ann Ocana, Research Fellow and Project Manager (mocana@umass.edu) with your interest and availability.

Brian Kane, Professor                         Commercial Arboriculture
Environmental Conservation                         bkane@eco.umass.edu
214 Holdsworth Hall, 413-545-6637

Measuring trees

Description: measuring tree branches to determine allometric relationships (e.g., branch length relative to branch diameter and leaf mass relative to branch diameter); there is also some laboratory work—mostly drying wood specimens to measure specific gravity and moisture content.

Intern will be working with Justin Esiason (an ENVSCI senior) who measured trees for a summer project and will continue doing so this fall; he will be supervising data collection.

Qualifications: someone who is responsible and has an eagerness to learn; a flexible schedule is also helpful.

Time Commitment: This is flexible, but at least 4 hours/week would be helpful.

Compensation: Academic credit is available (graded or pass/fail). It may be possible to continue some of the work in the spring semester if student is interested.
Dating a bedrock terrace on the Dolores River, Utah to constrain bedrock erosion rates

**Description:** The valley of the Dolores River in eastern Utah contains a number of bedrock terraces that were carved by the river prior to incision to its modern level. The bedrock is overlain by gravel and cobbles that were being transported by the river when the terrace was being formed. I have 5 samples of gravel from a soil pit dug into the terrace. The goal of the project is to measure the concentration of a rare nuclide in the samples to constrain the age of the terrace. The project will involve working in a laboratory to sieve samples, conduct mineral separation to purify quartz, and prepare the samples for chemical analysis. The resulting exposure age, along with the elevation of the terrace above the modern Dolores River, will be used to constrain the rate of bedrock incision.

**Qualifications:** ability to work carefully in a laboratory

**Time commitment:** 3-6 hours per week for entire academic year. Students must be able to work on the project during both fall and spring semesters.

**Compensation:** independent study or practicum credits. One credit possible for every three hours worked per week.

As part of the Neighborhood Nestwatch project, volunteers found and monitored bird nests in their suburban, rural, and urban backyards. In the 2017 season, after a given bird’s nest fledged or failed, the nest was taken from the shrub or nest box and collected. We now need students to help with lab work deconstructing the nests to determine what materials were used in them, and how much of each material was used (based on the relative mass) in a given nest. Interns will be supervised by Michael Akresh, graduate student in Eco, and by Dr. Susannah Lerman.

**Qualifications:** There is no prerequisite knowledge required, though an interest in bird biology or urban ecology is desired. The student will gain skills on nest dissection and become proficient in classifying and categorizing plant and other materials based on their appearance and other characteristics. The student must have patience, be detail-oriented, have strong organizational skills and have the ability to conduct hours of work dissecting small nest materials with their hands and tweezers, and then weighing out these materials in a precise, accurate manner.

**Time commitment:** Flexible. 3-9 hours/wk.

**Compensation:** Academic credit available – either independent study credits (graded) or practicum credits (Pass/Fail). It is possible for the student to extend the project through the Spring semester.

Faculty Research Interests. Updated September 2017.
Boreal Forest Research Assistant

**Project description:** Seeking two undergraduate assistants to work on two on-going research projects assessing the impacts of climate change on boreal forest wildlife (red squirrels, carnivores & snowshoe hares). Primary duties will involve processing and entering camera trap data into existing photographic databases. This position is ideal for students interested in:

- gaining experience with ecological databases, including data entry and design,
- improving wildlife identification skills, and
- learning about the impacts of climate change on boreal forest species, including Canada lynx, American marten, and snowshoe hares.

In addition, there is an opportunity for the student to develop an independent research project using data collected and processed for these projects. Any students involved in our projects will have the opportunity to secure long-term positions in our research group based on performance during the semester.

**Qualifications:** Applicants are expected to be highly motivated, detail oriented, and have some data management experience with MS Excel and preferably familiar with MS Access.

**Time commitment:** Students required to contribute at least 8 hrs to assigned projects per week.

**Compensation:** Academic credit available. Independent study (graded project) or Practicum (pass/fail). Three hours of effort each week required for each academic credit earned.

**Contact:** Alexej Sirén (PhD student) (asiren@umass.edu) and Marketa Zimova (PhD candidate) (marketzimova@gmail.com) with a short paragraph describing why you would be interested in the position and the relevant skills that you would bring to the project.

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Om Parkash Dhankher, Stockbridge School of Agriculture
318 Paige Lab, 413-545-0062

**Biofuels & Plant Biotechnology**

**Description:** Long-term projects available for students interested in developing dedicated biofuel and Climate Resilient crops through biotechnology. Project involves gene cloning, gene expression, developing and analysis of transgenic plants for biofuel suitability, by improving the oil yield in oil seed crops as well as crops performances under various abiotic stresses in response to changing climate. Another project is engineering rice to block the uptake of arsenic, to result in healthy rice crop (without arsenic) even when grown on high arsenic soils. Fall semester work would be mostly reading related scientific literature to gain a working knowledge of the science involved and training with lab techniques, with actual lab work beginning in Spring 2018.

**Qualifications/Eligibility:** Freshmen and Sophomore Commonwealth Honors students who are seriously interested in Environmental and Plant Biotechnology are encouraged to apply (possible thesis option).

**Time Commitment:** Student must be able to spend 9-10 hours each week on the project. Students must have strong interest in biotechnology and looking for long-term research opportunity.

**Compensation:** Three academic credits per semester – graded independent study projects only.

Faculty Research Interests. Updated September 2017.
Multiple positions are available in freshwater ecology:

1) Laboratory assistance for graduate project rearing freshwater mussels in a propagation laboratory (with Virginia Martell, MS student). Work involves assisting with maintaining juvenile mussel rearing systems; feeding, cleaning, and sampling mussels for growth and survival during experimental trials. Experience with Microsoft Excel, Image Pro/Image J, sampling procedure, statistical software and a strong interest in aquatic ecology and laboratory based research are preferred. Dependability, attention to detail, initiative, problem-solving, and independence will also be considered. The ability to lift heavy objects multiple times a day and use various power tools will be beneficial, but not required. The position is based at the US Fish and Wildlife Service Richard Cronin Aquatic Resource Center on Pluntree Road in Sunderland, MA, and students must have reliable transportation to the laboratory (5 minutes from UMass-Amherst and on the bus-line). Students interested in both fall and spring semester commitment will be considered. Preference will be given to juniors and seniors. This position is for 3 practicum credits (9 hours/week), and preferred schedule availability will be blocks of 3-4 hours in the lab.

2) Laboratory assistance for graduate project examining age and growth of juvenile river herring (with Matt Devine, PhD student). Work involves extracting and mounting otoliths (fish ear bones) from small fish (< 100 mm) and counting growth lines from otoliths under a dissecting microscope. Students comfortable using microscopes and willing to work alongside others are encouraged to apply. We are also looking for a student with database experience to help create an MS Access database for the river herring project.

3) Finally, possible positions are available for students interested in conducting field work for water quality or freshwater mussels in lakes or streams. Field work students must have a full or nearly full day (i.e., only one class in very beginning or end of the day) available to assist.

Time Commitment/ Compensation: All positions are available for academic credit (1-3 credits, 3-9 hours/week), with possible extension into Spring 2018 for selected projects. Students will work directly with graduate student mentors, and have the opportunity to participate in weekly lab meetings with the entire Roy lab group.

Honor’s students interested in conducting aquatic research in 2018 are encouraged to apply. Compensation for work study students is possible.

When applying, please indicate which project(s) you would like to be considered for and your general availability. More information about Dr. Roy’s research can be found at: http://www.coopunits.org/Massachusetts/People/Allison_Roy/index.html
Climate change induced shifts in phenology of coastal fish and wildlife

Description: This opportunity seeks motivated undergraduates to help investigate how climate change is influencing shifts in phenology (also known as the timing of recurring life history events) in coastal fishes, marine mammals, and seabird species along the Atlantic coast. Two specific case studies that students may choose are focused on 1) patterns in regional harbor and gray seal distribution and phenology, and 2) spawning migration phenology of river herring.

Students will be expected to:

1) compile, digitize, organize and verify accuracy of existing datasets;
2) conduct literature searches and prepare reports on species related to the student’s interests, and/or
3) map and evaluate species occurrence data in ArcGIS. Students selected to work on this project will discuss their research interests and goals with the project investigators and tailor their project to include one or more of the tasks listed above.

The position is based out of the Northeast Climate Science Center at UMass Amherst. More information on this opportunity can be found at:


Qualifications: Applicants with a strong background and interest in marine and coastal ecosystems, use of spreadsheets, GIS and analytical skills are especially encouraged to apply. Dependability, attention to detail, initiative, and independence will also be considered.

Supervisors: Michelle Staudinger (PI-NE CSC); Kate Jones (MS Student, GIS professional Program); Becky Dalton (Visiting NSF GRIP, PhD Student)

Period: Fall semester with possible extension into spring

Anticipated time commitment: 1-2 credit hours, or 3-6 hours of work per week

Compensation: Work is for Independent Study or Practicum credits; Paid positions may be available in the future for strong candidates; workstudy students are encouraged to apply.
**Project #1: Spatial use of American marten in the White Mountains of New Hampshire**

**Description:** Seeking an undergraduate assistant to become involved in an occupancy project involving the American marten (*Martes americana*). Over the past summer, over 600 fecal samples were collected from across the White Mountains. Analysis of these samples will enable us to evaluate what habitat conditions (primarily forest cover, elevation, and the presence of other predators) affect marten presence and distribution.

The assistant will have the following duties:

- Assist with data entry (especially at the beginning of the semester)
- Extract DNA samples from the fecal material for further genetic analysis

In addition to assisting with the current research projects there is potential opportunity for the student to develop an independent project using the data collected.

**Time commitment:** Student will be required to contribute at 6-10 hrs to assigned projects per week. Students involved in this project will have the opportunity to participate in other projects in the Spring semester based on their performance during the Fall semester.

**Compensation:** Academic credit available. Graded independent study or pass/fail practicum. Three hours weekly effort per credit.

**Contact:** Donovan Drummey, M.S. student ([ddrummey@umass.edu](mailto:ddrummey@umass.edu)) with a short paragraph describing why you would be interested in the position.

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**Project #2: Ecological responses to urbanization**

**Description:** Seeking undergraduate assistants to work on an ongoing evaluation of ecological responses to human induced landscape change in the Pioneer Valley. Primary duties for **field assistants** will be to conduct a series of transect surveys for red-backed salamanders at a series of sites throughout the Pioneer Valley. Transects consist of searching natural cover and recording a series of measurements on each salamander encountered. **Laboratory assistants** will help to sort and identify samples of soil invertebrates using a dissecting scope and dichotomous key. The requirements and expectations for each position are as follows.

**Salamander Survey Technicians** will be required to:

- Navigate to study sites via GPS. Requires off trail travel, and traversing occasionally steep, thick, or otherwise difficult terrain.
- Conduct a series of natural cover transect surveys following a clearly specified protocol including laying a transect line, flipping natural cover objects, and recording data.
- Carefully identify and measure all red-backed salamander specimens encountered.
- This student **must have a valid driver’s license**, and preferably have access to a vehicle, as field sites are located throughout the Pioneer Valley (from Gill, MA in the north to Longmeadow, MA in the south), and students will be responsible for their own transportation.

Faculty Research Interests. Updated September 2017.
Invertebrate ID Technicians will be required to:

- Examine preserved samples of soil and leaf litter invertebrates under a dissecting scope.
- Identify specimens to Order or Family level using dichotomous keys.

In addition to existing research projects there is potential opportunity for the student to develop an independent research project using data collected.

**Time commitment:** Student will be required to contribute at least 10 hrs each week to assigned projects. Students involved in this project will have the opportunity to secure long-term positions in our broader SPARCnet research group based on performance during the semester.

**Compensation:** Academic credit as either independent study credits with a graded project component, or pass/fail ‘practicum credits’ for those wishing only to provide basic assistance to graduate student supervisors.

**Contact:** Email Jill Fleming, MS student ([jefleming@umass.edu](mailto:jefleming@umass.edu)) and Ben Padilla, PhD student ([bjpadilla@umass.edu](mailto:bjpadilla@umass.edu)) with a short paragraph describing why you would be interested in the position.

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**Paige Warren, Associate Professor**  
Environmental Conservation  
216 Holdsworth Hall, 413-545-0061

Research in the Warren lab focuses on the impacts of urbanization on wildlife. Suburban development changes habitat structure, influences resource availability, and affects wildlife behavior. Multiple projects available (see list below).

**Project 1: Avian urban ecology study**

**Description:** Seeking laboratory technicians for an avian urban ecology study. There is the potential to continue working for the project into the Spring semester as well. This study is focused on the effects of perceived predation risk on House Wren nesting biology on an urban-to-rural gradient. During our summer field seasons, we monitor House Wren nests in nest boxes on private homeowner lands. We work in collaboration with [Neighborhood Nestwatch Springfield](http://nestwatch.org), administered by the Smithsonian and U.S. Forest Service. We conduct avian, small mammal, and habitat surveys, monitor nests, and measure House Wren eggs and nestlings. We are now seeking undergraduate technicians to aid in mammal camera data entry, videography data entry, nest dissection and ectoparasite sorting, and data management. Positions can be either for credit or on a volunteer basis.

**Intern Position:** **Mammal Camera Technicians** (6 positions available)

**Duties/Qualifications:** Mammal camera technicians will be responsible for entering data by sorting through mammal camera trap photos. In addition, technicians will do miscellaneous data-related tasks. Undergraduates applying for this position must be responsible, careful and detail oriented, and hard-working. No prior research experience is required, but preference will be given to undergraduates who have an advanced understanding of small mammal and bird identification skills. Technicians will have the opportunity to learn small mammal identification, bird identification, and basic principles of scientific data collection and processing.

**Time Commitment/Compensation:** This is a 6 hour per week (i.e., 2 credit) position. This can be offered as ENVSCI or NRC practicum credits. Students **must** have at least 6 hours of Faculty Research Interests. Updated September 2017.
availability per week, preferably in blocks of at least 2 hours. After training, undergraduates may work off-site and make their own hours, but will be required to carefully log hours. Undergraduates that can work responsibly independently will succeed in this position.

**Intern Position: Data Management Technician – (1 position available)**

**Duties/Qualifications:** Data management technicians will be responsible for sorting and managing data on a Microsoft Access database and Microsoft Excel, along with entering and scanning data from datasheets. In addition, technicians will do miscellaneous data-related tasks such as backing up, validating, and sorting data, or other related tasks as needed. Undergraduates applying for this position must be responsible, careful and detail oriented, and hard-working. No prior research experience is required, but preference will be given to undergraduates who have an advanced understanding of database management and/or Microsoft Access. Technicians will have the opportunity to learn the basics of managing a Microsoft Access database and basic principles of scientific data organization.

**Time Commitment/Compensation:** This is a 3 hour per week (i.e., 1 credit) position. This can be offered as an ENVSCI or NRC practicum credit. Students **must** have 3 hours of availability between Tuesday – Friday and between 9 a.m. and 5 p.m. to work in the lab.

**Intern Position: Videography Technician – (2 positions available)**

**Duties/Qualifications:** Videography technicians will be responsible for watching behavioral videos of House Wren adults feeding nestlings, and will be “scoring” (entering) behaviors using the program JWatcher. In addition, students may aid in miscellaneous data management tasks. Undergraduates applying for this position must be responsible, careful, observant, detail oriented, and hard-working. No prior research experience is required, but preference will be given to undergraduates who have had experience in bird identification, and/or animal behavior (e.g., taken an ornithology or animal behavior course). Technicians will have the opportunity to learn the basis of behavioral observation and videography methods, bird behavior, bird identification, and basic principles of scientific data organization.

**Time Commitment/Compensation:** This is a 6 hour per week (i.e., 2 credit) position. This can be offered as NRC practicum credits. Students **must** have at least 6 hours of availability (preferably in at least 2 hour blocks) between Tuesday– Friday and between 9 a.m. and 5 p.m.

**To apply:** Please e-mail a cover-letter outlining interests and previous experience, along with a CV/Resume with relevant experience to Aaron Grade (agrade@umass.edu), a PhD student in Dr. Paige Warren’s lab.

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**Project #2. Bird TV? Behavioral Analysis of Nesting Songbirds from NestCam Footage**

**Project Description** Research in the Warren lab focuses on the impacts of urbanization on wildlife. Suburban development changes habitat structure, influences resource availability, and affects wildlife behavior. As food availability in a habitat changes, animals must make foraging decisions to optimize the use of their time and energy while still avoiding predator detection. We are looking for research assistants to contribute to a project on parental behavior of songbirds at the nest, utilizing previously recorded video footage of nesting wood thrushes and gray catbirds.
Duties for the potential assistant would include watching nest videos and collecting data from them using a computer program developed for this purpose. Opportunities may arise to assist with other lab projects as well as to assist with data analysis and writing for interested students.

Qualifications: This position requires a person who is: interested in birds and animal behavior, highly reliable, able to work independently, detail oriented, strong on critical thinking skills. There is a possibility to stay on in the lab during the next semester.

Time Commitment: Students must have at least 6 hours of availability (preferably in at least 2 hour blocks) between Monday– Friday and between 9 a.m. and 5 p.m. Preferred Hours Per Week: 6-10

Student Eligibility: Sophomore, Junior, or Senior standing.

Compensation: Academic Credit. Practicum (mandatory pass/fail grading). Three hours per week per credit.

Contact Person: Kit Straley, Graduate Student kstraley@cns.umass.edu. To apply, please submit 1) a brief letter expressing your interest, 2) a copy of your resume with relevant work and coursework, and 3) unofficial transcripts.

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Project #3: Spiders, Worms, and Pillbugs - Oh My!
Sorting Leaf Litter Invertebrates from Suburban Forests

Project Description: We are looking for research assistants to contribute to a project on food availability for nesting songbirds in suburban and rural forest habitats. Duties for the potential assistant would include sorting and counting invertebrate samples collected over the previous summer. Interested students may also contribute as writers to an ongoing outreach blog on insects in the lab: https://bittybugs.wordpress.com/.

Opportunities may arise to assist with other lab projects, such as the preparation of fruit and invertebrate samples for stable isotope analysis.

Qualifications: This position requires a person who is interested in invertebrates and insect taxonomy, highly reliable, able to work independently, detail oriented, and strong on critical thinking skills.

Time Commitment: Students must have at least 6 hours of availability (preferably in at least 2 hour blocks) between Monday– Friday and between 9 a.m. and 5 p.m. Preferred Hours Per Week: 6-10. There is a possibility to stay on in the lab during the next semester.

Student Eligibility: Freshman, Sophomore, Junior, or Senior

Compensation: Academic Credit: Practicum (pass/fail grading) Three hours per week per credit.

Contact: Kit Straley, Graduate Student. kstraley@cns.umass.edu. To apply, please submit 1) a brief letter expressing your interest, 2) a copy of your resume with relevant work and coursework, and 3) unofficial transcripts.

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Faculty Research Interests. Updated September 2017.
Project #4: Data Management and Analysis of Suburban Bird Project

Project Description: We are looking for research assistants to contribute to a project on food availability for nesting songbirds in suburban and rural forest habitats. Duties for the potential assistant would include reviewing data collected over the summer for accuracy, working with a Microsoft Access database and Excel to input new data, and working with a graduate student on exploratory visualization of data.

Qualifications: This position requires a person who is: interested in data management and computer programs, highly reliable, able to work independently, detail oriented, strong on critical thinking skills.

Time commitment: 3-10 Hours Per Week. There is a possibility to stay on in the lab during the next semester.

Student Eligibility: Sophomore, Junior, or Senior

Compensation: Academic Credit. Practicum (pass/fail grading). Three hours per week per credit.

Contact: Kit Straley, Graduate Student kstraley@cns.umass.edu. To apply, please submit 1) a brief letter expressing your interest, 2) a copy of your resume with relevant work and coursework, and 3) unofficial transcripts.

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Project #5: Bird Nest Dissections - Sorting Building Materials and Counting Ectoparasites

Project Description: We are looking for research assistants to contribute to a project on food availability for nesting songbirds in suburban and rural forest habitats. Duties for the potential assistant would include dissecting House Wren, Gray Catbird, and Wood Thrush nests to identify and sort the materials used to build the nest. In addition, they will be finding, sorting, identifying, and preserving invertebrate ectoparasites that occupy the nest for a nest parasite study.

Qualifications: This position requires a person who is interested in getting lab work experience, highly reliable, able to work independently, detail oriented, strong on critical thinking skills. There is a possibility to stay on in the lab during the next semester.

Time Commitment: Students must have at least 6 hours of availability (preferably in at least 2 hour blocks) between Monday– Friday and between 9 a.m. and 5 p.m. Hours Per Week: 6-10

Student Eligibility: Sophomore, Junior, or Senior standing

Compensation: Academic Credit. Practicum (pass/fail grading). Three hours per week per credit.

Contact: Kit Straley, Graduate Student kstraley@cns.umass.edu. To apply, please submit 1) a brief letter expressing your interest, 2) a copy of your resume with relevant work and coursework, and 3) unofficial transcripts.

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Project #6: Global Analysis of Urban Biodiversity and Socioeconomic Inequality

Description: The Warren Urban Ecology Lab is seeking a undergraduate research assistant to aid in a global analysis of urban biodiversity and socioeconomic inequality. In some cities, plant and animal diversity is closely tied to the wealth of city residents (more money means more diverse ferns and flowers, for example). But this is not the case in every city.

Duties: Assist graduate student to compile, manage, and analyze city-level information related to patterns of biodiversity and socioeconomic benchmarks.

Qualifications: Ideal applicants will have experience creating and managing large databases in excel as well as fluency finding and extracting information from the online databases.

Time commitment: This position is available for the Fall semester for 3 hours a week as either an independent study (letter graded) or practicum (pass/fail grading), depending on student interest. Three hours per week per credit.

Contact Evan Kuras (graduate student) ekuras@umass.edu for more information.

Baoshan Xing, Professor  Environmental & Soil Chemistry
Stockbridge School of Agriculture  bx@umass.edu
410 Paige Lab, 413-545-5212

Four project areas:

- Environmental behavior and application of engineered nanoparticles;
- Fate of engineered nanomaterials in simulated gastrointestinal systems;
- Interaction between engineered nanomaterials and plants;
- Sorption and degradation of organic pollutants by engineered biochars

Qualifications: Students must have basic knowledge of chemistry and willing to work diligently.

Time Commitment: Nine to ten (9 to 10) hours/week anticipated. It is preferred that students can extend their research to Spring 2018 (even Summer 2018) for completion of the project and producing meaningful/publishable data.

Compensation: Graded Independent Study credits only. For the summer of 2018, paid internship is potentially available, depending on the performance of the students during the semesters.

Other campus research opportunities can be found on the Biology Research Site:
BURA (https://www.bio.umass.edu/bura/content/welcome)
Off-Campus Internship Opportunities

**Town of Palmer, Conservation & Planning Department**
Angela Panaccione, Conservation Agent conservation@townofpalmer.com
Town of Palmer, 4417 Main Street, Palmer, MA. 413-283-2687 (cell: 413-222-4934)

**Description/Duties:** Looking for two interns for this year. The focus would be split between administration and enforcement of the Wetlands Protection Act and Conservation Land Maintenance. This would consist of attending Conservation Commission meetings, recording and typing minutes, attending site visits, reviewing site plans and helping draft permits under the Wetlands Protection Act and the Town Wetlands Ordinance. The Conservation Land Management would include boundary marking and GPS locating survey points in the field from deed descriptions as working with SCA AmeriCorps and local scout troops to administer a recreational trails grant for a universally accessible river walk.

There is also an additional internship opportunity working on stormwater mapping and monitoring in coordination with town’s Department of Public Works (DPW).

**Qualifications/Eligibility:** I’m normally looking for Juniors or Seniors, with a focus in either Environmental Policy/Land Use or Environmental Planning/Natural Resources Conservation. Stormwater intern will need valid driver’s license and must provide own transportation (but will be reimbursed for mileage).

**Time Commitment:** Flexible. Time commitment will determine academic credit awarded.

**Compensation:** Academic credit can be awarded (with campus faculty sponsor). It could either be a graded independent study course, or a pass/fail practicum, or a project could be tailored to meet senior thesis requirements. Three hours per week equates to one academic credit.

**Contact:** Angela Panaccione about internship position. Successful candidates can coordinate academic credit through Deb Henson dhenson@eco.umass.edu

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**Howard Laboratories, Hatfield MA**
62 Main Street, Hatfield, MA (413) 247-5533 howardlabs@gmail.com

**Water Quality Testing**

**Duties:** Intern will shadow staff and learn water sampling protocols, laboratory microbiology analyses procedures, and related paperwork and record-keeping protocols to satisfy regulatory requirements.

**Qualifications/Eligibility:** Junior or Senior standing; knowledge of basic chemistry and biology required, microbiology background a plus. Must have transportation to lab facility (12 miles from campus)

**Time Commitment:** 8-12 hours per week; must have 2 or 3 time blocks of 4 consecutive hours.

**Compensation:** Combination of academic credit (for time spent shadowing with staff) and minimum wage paid hourly for any time when intern is working independently.

**Contact:** Send an email to howardlabs@gmail.com, and include a copy of your resume along with a short statement (about why you feel that this internship experience would be of value to you), along with what hours you would be available each week. No phone calls please.