SUMMER 2018
Undergraduate Research Opportunities
For Environmental Majors

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. Some of these research opportunities are paid positions. Read each posting carefully to see what compensation is available.

Basic Instructions:

1) Student should review list of available projects below, and then contact faculty members directly to learn more about project expectations and qualifications (if any) that are needed. **Students must provide the following information with their inquiry:**

   ***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/availability required for the project based on the advertisement listed here. Indicate "SUMMER RESEARCH INTERN" in the subject line of your email.**

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/wp-content/uploads/2011/11/ENVSCI_IndepStudyForm_fields.pdf

   Instructions for completing the form are provided on-line within the same document link. Please note that all Independent Study projects (ENVIRSCI 296, 396, 496) must be letter graded. Student can choose to enroll in Internship/Practicum credits (ENVIRSCI 298, 398, 498), but these courses are mandatory Pass/Fail.

3) **To enroll for SUMMER Credits, the completed Independent Study Contract must be delivered to the ENVSCI Program Office at 310 Holdsworth Hall before the end of the Spring semester.** Additional paperwork is required to enroll through Continuing & Professional Education for Summer credits. You will be guided through this process. Please note that there is an additional tuition cost for enrolling in summer credits. (Note: It may be possible to roll-over some academic credit into the Fall term, depending on what follow-up written report might be required and when this work is conducted.)

SEE LIST OF FACULTY RESEARCH INTERESTS ON NEXT PAGE.

~ Environmental Research Opportunities ~ Summer 2018~

Dwayne Breger, Extension Professor **Clean Energy Extension**
Department of Environmental Conservation **dbreger@umass.edu**
209 Agricultural Engineering Building, 413-545-8512

UMass Clean Energy Extension (CEE) is looking for a summer scholar through the Center for Agriculture, Food, and the Environment (CAFE) program, to study rural transportation patterns in Massachusetts municipalities, and explore options regarding green transportation and vehicle fuel use reduction. CEE provides support to designated Green Communities – Massachusetts municipalities working to improve energy efficiency, increase use of renewable energy technologies, and ultimately achieve a 20% reduction in municipal energy usage over a 5-year period. While many small rural towns have shown impressive reductions in building energy usage, these municipalities have struggled to bring down vehicle fuel usage, which often comprises a large proportion of town energy budgets.

Project Description: The successful applicant will work with CEE staff, the Massachusetts Clean Cities Coalition (MCCC), and participating rural communities to implement telematics vehicle monitoring systems, with the goal of collecting and analyzing travel patterns and vehicle usage data from rural municipal vehicles and systems. The student will compile data from Massachusetts towns which have implemented vehicle monitoring programs, and conduct analyses to determine the degree to which monitoring programs, route optimization, and other strategies have improved vehicle fuel use efficiency. The student will also contact Massachusetts towns that have taken steps to improve vehicle use efficiency through other methods and technologies, such as purchase of hybrid or hybrid-electric vehicles, route planning, anti-idling technologies, and use of wing plows, and will document municipal experiences with these technologies, and the degree to which they have reduced town vehicle fuel usage. These activities, combined with a survey of rural barriers to transportation efficiency, will help CEE evaluate and document the range of options available to help rural towns decrease vehicle fuel usage, and direct programming to help towns in these efforts.

Superviser(s): Dwayne Breger, CEE Director; Zara Dowling, Research Assistant and ECo graduate student

Qualifications: Competency in Excel and basic data analysis; literature review research abilities; good writing and interpersonal skills; comfortable initiating phone and e-mail contact with municipal officials

Commitment: Approximately 300 hours over the course of the summer (May 15-August 31), e.g. about 20 hours a week for 15 weeks.

Compensation: The student will be paid as an hourly student employee ($15/hour) through the CAFE Summer Scholar Program.

Application process: Priority deadline of March 23, if position is not filled immediately, applications will be considered after this date. Initial contact should be to graduate student Zara Dowling (zdowling@umass.edu).

Joe Elkinton, Professor **Biological Control / Invasive Species Mgt**
Environmental Conservation **elkinton@eco.umass.edu**
310 Agricultural Engineering Bldg, 413-545-4816

Project Description: The overall goal of this proposed work is to release and establish a new biological control agent against Japanese knotweed (*Fallopia japonica*) to restore affected natural areas. The permit for release of the first biocontrol agent for this plant, the knotweed psyllid (*Aphalara itadori*) (Fig. 1), will be issued by APHIS shortly and releases will begin following mass rearing of the psyllid. Knotweeds are major invasive species in riparian corridors and old fields. Large stands of knotweed have been noted in many northeastern states along higher velocity rivers, where the weed occupies thousands of acres of wetlands, stream banks, and hillsides. *Aphalara itadori* feeds on the sap of the plant, depleting the plant's energy supply. High densities of psyllids will cause the leaves to twist into tight knots (Fig. 2). In the laboratory, psyllids are capable of killing potted knotweed plants within one psyllid generation (about one month).

Fig. 1. The pysllid Aphalara itadori

Fig. 2. Psyllid damage on knotweed

Qualifications: We are looking for a Sophomore/Junior Honors student to take on the project as their Honors thesis, with the option to extend into a fifth year Master's degree. An independent person is sought. Work will occur mostly in the field, in five river systems (ten sites), in western MA, southern VT and southern NH. The person chosen must be hardy and self-reliant, and comfortable working alone in the woods and in rivers.

Commitment: Begin field research this summer and continue studies for the next year or more. The student selected will be expected to lead the project and to develop new activities, as well as work up past and future data for publication under his or her first authorship.

Compensation: Academic credits / Honors research project

To Apply: Email statement of interest to Professors Elkinton (elkinton@eco.umass.edu) and Vandriesch (vandries@cns.umass.edu). Additional materials, such as a resume and transcripts, may be requested subsequently.

Masoud Hashemi, Extension Professor **Sustainable Farming Systems / Cover Crops**
Stockbridge School of Agriculture **Masoud@umass.edu**
207 Bowditch Hall , 413-545-1843

Project Title: Grow your own fertilizer

Project Description: The main goal of the project is to introduce a new and innovative natural source of N to the organic farmers in New England. Our hypothesis is that sunn hemp as a new legume cover crop produces high biomass and accumulates a significant amount of N so that can be grown in summer as a fast growing cover crop, being harvested in September and then processed to produce a pelletized natural nitrogen fertilizer. This naturally rich source of N can be used as alternative to the current high price materials that are available to the organic growers. Additionally, the roots of the crop will feed the soil microbe community, thus enhance soil health. In this project we will explore optimum harvesting time and whether if multiple harvestings result in overall higher N yield.

Location: UMass Campus, Hashemi Lab and South Deerfield Research Farm.

Supervisors: Dr. Masoud Hashemi and graduate student Alexa Smychkovich.

Qualifications: The student must have the willingness and capability to complete fieldwork and field sampling, and should be familiar with creating graphs in Excel and generate Power Point presentation. Some basic experience working in a lab is preferred, but not required.

Duration of the project: The project begins first of June and ends by end of the August. Reduced hours of work in September and November is available and preferred.

Compensation: 12$/hour, Independent Study Credits, Practicum Credits or a combination of options.

Accept by Date: Students will be interviewed prior to being accepted. The deadline is May 15 or sooner if a qualified applicant is hired.

Joan Milam, Adjunct Research Fellow **Pollinator Ecology**
Environmental Conservation (Adjunct Faculty) **jmilam@umass.edu**
Holdsworth Hall, 978-302-6499

Field and Lab Technician Job in Pollination Ecology:
Positions available: 2-3

Description: I am seeking research technicians to conduct lab and fieldwork for a project investigating wild bee diversity and ecology in managed forests and forest gaps. Lab work includes preparing specimens, curation (insect pinning, label making) and data entry. Technicians will gain some bee identification skills. Fieldwork will involve deploying and collecting bee bowl transects, active netting of bees on flowers, and recording site characteristics. Lab work will take place at the University of Massachusetts Amherst. Field sites are located within an hour of the University.

Qualifications: Willingness to work outside in hot, humid, buggy conditions; ability to carry up to 40 lbs; drivers' license; no known bee sting allergy; maturity and ability to work independently. Experience with field entomology and/or botany preferred but not required.

Commitment: Positions run for ~12 weeks June through August, 2018 (exact dates negotiable), at 40 hours per week.

Compensation: Pay is $11 to $13 per hour, depending on qualifications. Occasional use of personal vehicle will be reimbursed.

Supervisor: Joan Milam, Adjunct Research Associate

To Apply: As a single PDF, please send a cover letter explaining why you are interested in this position, a resume, and the names and contact information of three references to - jmilam@eco.umass.edu. Please put “Pollination Tech” in the subject line of your email. Review of applications will begin March 26 and continue until the positions are filled.

Scott Jackson, Extension Assistant Professor **Extension/Outreach**
Environmental Conservation **sjackson@umext.umass.edu**
328 Holdsworth Hall, 413-545-4743

Climate Change Adaptation and Outreach

Project description: We are seeking 1 student to assist with:

>expanding a community/network of climate change adaptation practitioners and researchers working on natural resources conservation in Massachusetts

>creating resources for the above network

>preparing for the Fall conference that we host

This is an exciting and dynamic time as there is a lot happening with climate adaptation in Massachusetts. We are ideally seeking students who enjoy brainstorming, encouraging collaborations, managing communications, and creating outreach materials.Work can be completed at UMASS or remotely.

Qualifications: Must have excellent communication skills and be organized.

Supervisor: Melissa Ocana, Climate Adaptation Coordinator and Extension Project Manager

Commitment: 3-6 hours per week depending on the student's interest and availability. The student must be interested in continuing into the Fall semester.

Compensation available: Practicum credits.

To Apply: Contact Melissa Ocana, mocana@umass.edu, Climate Adaptation Coordinator and Extension Project Manager.

Toni Lyn Morelli, USGS Research Ecologist **Climate Change Impacts**
Environmental Conservation (Adjunct Faculty) **tmorelli@usgs.gov**
Northeast Climate Science Center, 134 Morrill Science Center, 413-545-2515

Project #1 -- Carnivores, Snowshoe hares, and Climate Change

Description – This research project seeks to disentangle the primary mechanisms that influence range shifts of carnivores in response to climate change. Our study area in northern New England includes snow-adapted carnivores (e.g., *Lynx canadensis* and *Martes americana*) which overlap with generalist species (e.g., *Lynx rufus*) that are considered better competitors in the absence of snow. Climate change, however, may reduce the viability of these species as winters become less snowy. Because prey abundance and habitat also drive carnivore distribution, it is unclear how fast and far each species will shift in response to a changing climate. To do this, we are using a combination of field techniques, including non-invasive and traditional surveys, and statistical methods, as well as partnering with natural resource agencies. Our findings will increase ecological understanding of range shifts and inform conservation and management strategies in the face of a changing climate.

Intern Duties – You will work with a team conducting snowshoe hare and carnivore research in northern New Hampshire and Vermont from mid-May to the end of June (end date is tentative and may extend to mid-July). You will be trained in the survey protocols at the beginning of the field season and be accompanied weekly by the project supervisor or lead technician. Briefly, fieldwork includes 1) maintaining and carrying field gear, 2) traveling to survey sites and conducting snowshoe hare pellet surveys, and 3) assisting with data management and analysis. You will also learn a camera-trap protocol and check sites within the study area. There may be an opportunity to assist with live-trapping, handling, and radio-telemetry of snowshoe hares and red squirrels, which would extend the internship to mid-July. You will gain knowledge of snowshoe hare and carnivore ecology in boreal and subboreal forests of northern New England; learn to identify and interpret wildlife sign, and identify tree, shrub, and plant species common in the study area and those browsed by hares; learn how to camera trap for carnivores; and develop communication skills through daily rapport with direct supervisors, local natural resource personnel, and the general public.

Qualifications/considerations – While the climate of northern New England is temperate during summer, the biting insects (i.e., mosquitoes, black flies, and deer flies) will test your patience. Furthermore, most of our fieldwork is off-trail and requires GPS navigation; both of which you be trained in. The region is mountainous and many of our sites are at high elevation. You'll need have a good attitude, work hard, think proactively, and have patience learning several new protocols and dealing with tough field conditions. Additionally, you will need to be in good physical condition, capable of carrying a 20-30 lb. backpack, hiking up to 15 km a day, and occasionally carry moderate loads (up to 40 lbs.) for short distances. While previous mammal handling and telemetry experience is preferred, desire to learn both of these skills is a necessity.

Locations & Conditions – Our study sites include housing with electricity, running water, private rooms, internet (one site only), and laundry. Typically, other research projects use these facilities which provides opportunities for networking and to learn about other wildlife studies (e.g., moose, rusty blackbirds). The region is a destination for hiking, swimming,

watersports, and motorized recreation with some of the highest peaks in the eastern United States. The intern will be responsible for travel to and from the study area (i.e., to or from Amherst), providing their own meals, and work clothing/gear. Transportation is provided for the Vermont study site and travel reimbursement or carpooling will be arranged for transportation to the New Hampshire study sites. If the intern does not have a vehicle, we will provide access to grocery and shopping stores.

Commitment & Schedule – You will be expected to work 5-6 days a week with most weekends off. We anticipate the 6-day work weeks to occur during the first half of the internship during pellet surveys. We generally work 8-10 hrs./day and take a half hour off for lunch. Inclement weather and unexpected events will occasionally alter fieldwork plans, so flexibility is required! Field research runs from midMay to end of June.

Compensation: Practicum credits…and valuable field experience.

Supervisors/Mentors – Dr. Toni Lyn Morelli and Alexej Sirén (PhD student) are the primary mentors. **Dr. Morelli will primarily be located at the University of Massachusetts Amherst campus and be available for weekly check-ins.** Alexej Sirén will be with you 1-3 days per week in the field and provide training and support. You will be accompanied by 1 other lead technician during daily field work. This individual has previous experience and will lead field efforts when Alexej is absent.

Supplies needed – You are expected to have the basic field gear. Briefly, you will need several pairs of light and/or mid-weight field pants, wicking long underwear, long sleeve shirts, hiking boots, rubber boots, back pack for lunch/water/gear, water bottles, bug spray, head cover/bug net, and rain gear (poncho and pants). We will provide field gear (GPS, field notebooks, compass, etc.) and a first aid kit.
To Apply: Send resume and statement of interest by **March 23 to Alexej Siren asiren@umass.edu**

Internship Prep – to gain further information about this research, you are encouraged to review the following literature.

- Overview of research project https://necsc.umass.edu/projects/assessing-potential-impacts-climate-change-carnivore-occupancy-and-snowshoe-hare-demography
- Potential impacts of climate change on Canada lynx and American marten in northeastern United States http://www.klamathconservation.org/docs/carroll2007.pdf
- Potential impacts of climate change on snowshoe hares http://onlinelibrary.wiley.com/doi/10.1111/ele.12568/full and https://www.eccforum.org/splitting-hares
- Information on the Vermont https://www.fws.gov/refuge/Silvio_O_Conte/about/vt.html and New Hampshire http://www.fs.usda.gov/whitemountain study areas.

Toni Lyn Morelli, USGS Research Ecologist **Climate Change Impacts**
Environmental Conservation (Adjunct Faculty) **tmorelli@usgs.gov**
Northeast Climate Science Center, 134 Morrill Science Center, 413-545-2515

Project #2: Climate Refugia for Birds and Odonates

Description: We are working with Acadia National Park to model potential climate change refugia for birds and odonates (dragon and damselflies) in Maine. Climate change refugia are locations that are relatively buffered from climate change over time due to topography, micro climate, etc., and can thus enable persistence of valued ecological and socio-cultural resources.

There are a range of tasks with which a student could assist, depending on skills and interests:

a. finding literature on climate-change impacts for Maine odonates, and writing climate change vulnerability profiles for individual species

b. searching/querying databases for survey data on a suite of odonates & bird species to determine data availability/ adequacy for specific species. Clean data and prepare summaries, maps, etc. to give to National Park.

c. use existing GIS data from the UMass DSL project to quantify the degree to which Acadia National Park and Maine represent specific habitat resources relative to the Northeast currently, and under future climate projections

d. run some exploratory species distribution models in MaxEnt

Qualifications: Must be interested in climate change impacts, be reliable, flexible, and have good communication skills. Other needed skills depend on the task:

a. Ability to read and synthesize peer-reviewed literature, and strong writing skills

b. Ability to manage, and summarize data in Excel. Ability to manipulate and graph data in R helpful, but not necessary.

c. Ability to manage, and summarize spatial data in GIS or R

d. Good computer skills, course in basic statistics, interest in ecological modeling, willingness/interest to learn, and read about species distribution models

Commitment: duration of work and hours per week is flexible. Work can take place at UMASS Amherst; some tasks can be completed remotely.

Compensation: Practicum (Pass/Fail) credits

Supervisor: Dr. Jenny Smetzer

To Apply: Send statement of interest to Jenny Smetzer <smetzer180@gmail.com> (noting the specific aspect of the project you wish to work on). Be sure to discuss your qualifications.

Allison Roy, Assistant Unit Leader **Aquatic Ecology**
Massachusetts Cooperative Fish and Wildlife Research Unit
Environmental Conservation, 317 Holdsworth Hall **aroy@eco.umass.edu**

THESE POSITIONS WERE ADVERTISED PREVIOUSLY AND HAVE AN APPLICATION DEADLINE OF 3/19/18.

Summer 2018 Technician Positions in Aquatic & Fisheries Ecology

Overview: We are looking for multiple student technicians for aquatic and fisheries ecology research projects in the Roy and Jordaan labs (described below). Preference will be given to rising sophomores and rising juniors from UMass Amherst. To apply, email cover letter (with name, email address, and phone number for two references, including at least one academic reference), resume (with your local contact information, pertinent experiences, relevant coursework, etc.), and unofficial transcript to Allison Roy aroy@eco.umass.edu. If you are interested in more than one project, please indicate your preferred order of consideration in your cover letter. Also indicate if you have work study or have any restrictions on summer availability. Review of applications will begin on **19 March 2018**, and interviews will take place the week of March 26th.

1) Lake Food Webs (1 position)

The technician will assist a PhD student on a project examining effects of winter lake drawdowns on lake littoral communities and food webs. The position is mostly lab work, but will occasionally conduct field work. In the lab, the technician will dissect fish and help with data management. Fieldwork will consist of water quality sampling, water level logger maintenance, habitat surveys, and fish sampling in a few lakes. The position is based at UMass Amherst, but will require driving to field sites throughout Massachusetts with USGS vehicles. Applicants with a strong background and interest in lab and field work, particularly related to aquatic systems are preferred. Must be able to swim and be comfortable in canoes and snorkeling. Dependability, attention to detail, initiative, and independence will also be considered.

Supervisors: Jason Carmignani (PhD student) and Allison Roy (PI)
Employment Period: May through August 2017 (15 weeks) for 35-40 hours/week, but flexible to do only part of the summer or work fewer hours/week (please indicate in your application)
Salary: $11/hour ($6000 for summer)

2) River Herring Productivity (2 positions)

The technicians will assist on a project investigating river herring productivity in estuaries and coastal freshwater lakes and ponds in New England. The positions are split between field work and lab work. For field work (10-15 days/month), juvenile fishes will be sampled at night in lakes from a boat using purse seines and during the day in estuaries using beach seines. Additional sampling will take place for water quality, habitat quality, zooplankton, etc. When not in the field, technicians will be ageing fish otoliths, identifying zooplankton, entering data, and organizing samples. Additional opportunities with this position include developing a database and performing statistical and/or spatial analyses. The position is based at UMass Amherst, but will require extended overnight travel (> 1 week at a time) to field sites throughout New England. Applicants with a strong background and interest in

fishes and aquatic systems, and have experience in field and laboratory settings are preferred. Must be able to swim, be comfortable on boats, and willing to work at night over the water. Teamwork and communication skills are essential. MOCC boat safety training will be provided.
Supervisors: Matt Devine (PhD student), Adrian Jordaan (PI), and Allison Roy (PI)
Employment Period: May through August 2017 (15 weeks) for 35-40 hours/week
Salary: $11/hour ($6000 for summer)

3) River Herring Ecophysiology (1 position)

The technician will assist on a project investigating the effects of temperature and food availability on juvenile river herring physiology in laboratory and field experiments. Initially (May), work will be focused on rearing river herring from eggs to juveniles, requiring careful fish and zooplankton husbandry. Later (June-Aug), the work will comprise of running ecophysiology experiments in the laboratory and potentially in the field. Daily tasks include caring for fish tanks, checking experimental systems, and measuring physiological traits/sampling fish. This position is primarily in the wet lab, although there will be limited field work opportunities. The position is based at Cronin Aquatic Resource Center in Sunderland, MA, where the technician will have opportunities to interact with other UMass students and USFWS biologists. Candidates who have attention to detail, ability to perform mundane tasks with accuracy, and are interested in learning about fish ecophysiology or fisheries/aquaculture are preferred.
Supervisors: Lian Guo (PhD Student) and Adrian Jordaan (PI)
Employment Period: May through August 2017 (15 weeks) for 35-40 hours/week
Salary: $11/hour ($6000 for summer)

4) Freshwater Mussel Conservation and Propagation (1-2 positions)

The aquatic technicians will work with a team of graduate students at the US Fish & Wildlife Service's Richard Cronin Aquatic Resource Center in Sunderland, MA (5 min from UMass-Amherst and on the bus line). Tasks include culturing freshwater mussels, using a microscope, recording data, cleaning and sterilizing equipment, and working around the facility and outside in the raceways. The technicians will also help a PhD student in the field which includes working with volunteers from the Connecticut River Conservancy. Field work involves collecting water quality, and conducting mussel and habitat surveys throughout rivers in Massachusetts. In June and August, the technicians may also work 2 days per week doing mussel surveys with the state endangered species biologist, Pete Hazelton. Applicants must be able to travel to and from Cronin, be comfortable in the water, and be willing to snorkel. The ability to work with tools and lift heavy objects is preferred. Candidates who have attention to detail, ability to perform mundane tasks with accuracy, and are excited about working with freshwater mussels will be considered.
Supervisors: Ayla Skorupa (PhD student), Virginia Martell (MS student), Timothy Warren (USFWS), Dave Perkins (US Fish & Wildlife Service), Pete Hazelton (MDFW), and Allison Roy (UMass)
Employment Period: May through August 2017 (15 weeks) for 35-40 hours/week
Salary: $11/hour ($6000 for summer)

5) Dam Removal (1 position)
The technician will assist a research associate in a project investigating stream ecosystem responses to small dam removal. The work involves downloading and deploying temperature loggers (May-June), deploying dissolved oxygen loggers (July-Aug), sampling macroinvertebrates, and potentially assisting MassWildlife with fish sampling. Lab work involves calibrating equipment and checking data. The position is based at UMass Amherst, but will require driving to field sites throughout Massachusetts (many sites are in eastern MA) with USGS vehicles. Applicants must have a driver's license and insurance to drive USGS vehicles. Applicants with a strong background and interest in water quality and streams are preferred. Must be able to swim and be comfortable in canoes. Dependability, attention to detail, initiative, and independence will also be considered.
Supervisors: Research Associate (TBD) and Allison Roy (PI)

Chris Sutherland, Assistant Professor **Wildlife Population Ecology**
Environmental Conservation csutherland@umass.edu
118 Holdsworth Hall, 413-545-1770

Investigation variation in ecological communities along urban-rural gradients

Description: The goals of this research are to better understand how human dominated land uses, i.e. as agriculture and urbanization, differentially impact forest ecosystems in western Massachusetts. Field research assistants will help collect data at more than 40 forested study sites across the Pioneer Valley. Specifically, field assistants will conduct vegetation identification surveys and salamander transect surveys. Opportunity to conduct bird point-count surveys is available for skilled individuals.

Location: This research will take place in the Pioneer Valley. All sites are within a 45min drive of UMass.

Supervisor(s)/Mentors: Dr. Chris Sutherland, and Benjamin Padilla (PhD Student)

Qualifications: We are looking for students with experience and interest in wildlife and plant identification. You should be able to hike on and off trails for up to 3 miles and be willing to be outdoors in potentially uncomfortable conditions (e.g., heat, rain, etc).

Commitment/Project Duration: This project will run from the beginning of May until early August. We are looking for students that can assist in field sampling for 10-20 hours per week.

Compensation: This is not a paid position. However, in addition to gaining excellent research experience and a wide range of field skills, participants in this project will have the opportunity for either independent study or practicum credits.

To Apply: Interested applicants should contact Benjamin Padilla (bjpadilla@umass.edu) by April 15th 2018.

Paige Warren, Associate Professor **Urban Wildlife Ecology**
Environmental Conservation **pswarren@eco.umass.edu**

Volunteer field interns needed for summer backyard bird and mammal study

Position Dates: Early or Mid-May – Late July (possibly into early August)

Background: Hello, I'm Aaron Grade, a PhD student co-advised by Dr. Paige Warren and Dr. Susannah Lerman. I'm seeking summer volunteer field interns for an avian urban ecology study. The study is focused on the effects of perceived predation risk and urbanization on House Wren nesting biology along an urban-to-rural gradient. We are also interest in surveying mammalian nest predators. We will be monitoring nest boxes in backyards of residents that participate in Neighborhood Nestwatch Springfield, a USDA Forest Service and Smithsonian Migratory Bird Center program directed by Dr. Susannah Lerman. A more detailed description of the research may be found here.

Logistics and Dates: The research takes place in backyards across Western Massachusetts, primarily in the Pioneer Valley. *Must be available from May – end of July, some flexibility with vacation dates or late start. Must be available from 3 – 5 days per week.* Hours will be 3 - 5 days per week (flexible days based on availability), from as early as 6:30 a.m. to as late as 3 p.m.

Activities and Skill-Building: Interns will learn and perform a variety of field-based skills. These include, but aren't limited to: Bird nest monitoring, nestling measurements, animal behavioral observations, color band resighting, bird and mammal surveys, camera trap surveys, playback experimental methods, bioacoustics, public outreach, data collection and entry using a database, and habitat and vegetation surveys.

Requirements: We are looking for responsible, hard-working, and detail-oriented individuals who can interact professionally with members of the general public and handle difficult field conditions (ex. heat, insects, poison ivy) and early mornings. **No prior research experience is required**, and **preference** will be given to UMass undergraduates seeking ecological field research experience. There is no need to have your own vehicle, but preference will be given to interns that have their own reliable vehicle and are willing to drive.

Compensation: This is an unpaid, volunteer positions with no housing provided, but a terrific opportunity to build field and research skills in ecology. Interns have gone on to obtain paid positions in ecological fieldwork. Limited funds will be available for travel reimbursement for technicians using their personal vehicle for fieldwork. There is also the possibility of applying for practicum credits for summer or fall semesters if you continue research in the lab.

To Apply: Applicants will be evaluated on an ongoing basis, but ***we prefer an application date of no later than April 1st.***

If interested, e-mail a ***cover letter*** *detailing your interests and a* ***CV or resume*** *detailing your experience to agrade@umass.edu*. Please include the names and contact information for two references.