

Rice Creek Field Station Small Grants Program Supported Research

| Year | Project Title | Principle Investigators S = student | Faculty / Adviser | Affiliation | Project Description | Category |
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| 2018 | Effects of temperature and day length on daily movements and home range of the Southern Flying Squirrel (<i>Glaucomys volans</i>) | Kervans Lerouge (S), Maria Sagot | | SUNY Oswego | To maximize energy gained and minimize energy expended, animals should forage in a manner that gives them the largest benefit at the lowest cost. Species living in seasonal environments, such as the Southern Flying Squirrel (<i>Glaucomys volans</i>) in the northeastern United States need to overcome high energetic demands associated with inclement weather and food availability. In this species, foraging is particularly expensive because these gliding squirrels need to travel between foraging patches and thus, they are negatively affected by the oxygen debt of locomotor activity. Furthermore, foraging in low temperatures is known to increase metabolic costs to maintain homeostasis. In this study, we will determine seasonal and year variation in the foraging patterns of the southern flying squirrels in response to temperature and day length. This study will allow us to understand how animals adapt to constantly changing environmental conditions in the northeastern United States. | mammalogy |
| 2018 | Effects of ophryocystis elektroscirrha (OE) on the Painted Lady Butterfly (<i>Vanessa cardui</i>) (Lepidoptera: Nymphalidae) | Joseph McCarthy (S) | Karen Sime | SUNY Oswego | The protozoan parasite <i>Ophryocystis elektroscirrha</i> (OE) infects three species of butterflies, monarchs (<i>Danaus plexippus</i>), queens (<i>D. gilippus</i>), and lesser wanderers (<i>D. petilia</i>). There are no documented cases of other butterfly species hosting OE, and no research has been done on its effects on other species. In the three <i>Danaus</i> hosts, OE infections can lead to shorter lifespans, reduced flight ability, lower fecundity rates, and an overall reduction in body sizes. I will study the effects of OE on a non-host species, the painted lady butterfly (<i>Vanessa cardui</i>), to determine if OE can complete portion any of its life cycle in painted ladies and what effects it might have on their development. Preliminary data indicate that exposing painted lady larvae to OE leads to a reduction in adult and pupal body mass and an increase in the duration of larval and pupal development. In addition to testing for additional effects on development, I will use histological techniques to investigate the fate of the parasite in both monarchs and painted ladies to determine where different parts of the parasite's life cycle occur and, in the case of painted ladies, how much of the life cycle is completed. Finally, I will also collect wild monarchs and painted ladies to determine how common OE is in our area, and if it can be found naturally on non-host butterflies. With OE becoming more common, a better understanding of its ecology may prove to be invaluable for future conservation work, especially in our area with obligate migratory populations of monarchs, migratory painted ladies and any other butterfly species potentially affected by OE. | entomology |
| 2018 | Establishing the Rice Creek hydrological monitoring array | Justin Stroup | | SUNY Oswego | The hydrologic cycle is one of the most fundamental systems on Earth. Tracking the path of water as it moves through the atmosphere and over and through the land is important for understanding landscape development, ecosystem distributions, and water resources. As such, it is crucial for students and the general public to become familiar with the hydrologic cycle and have the opportunity to learn how to measure its changes and track those changes through time. In addition, students and the general public are interested in average conditions and how they compare to the extremes of floods and droughts. This proposal aims to establish the Rice Creek Hydrological Monitoring Array which will be used for the long-term monitoring of Rice Creek stream discharge, ground water levels and weather station data, in order to understand changes and relationships within the hydrologic cycle. Currently, the Rice Creek Field Station has a weather station which provides to-the-minute weather | hydrology |

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| | | | | | <p>measurements (e.g., temperature, wind speed, humidity, and precipitation). By monitoring surface and groundwater flow, this proposal will build on weather station data and allow us to begin monitoring the hydrologic cycle at the Rice Creek Field station. I seek funding to install stream gauging equipment to measure changes in Rice Creek discharge. I also seek funding to instrument new shallow groundwater monitoring wells (installed in the fall of 2017 as part of my GEO 430 Hydrogeology class) located proximal to the Brownell Road Bridge. Changes in the water levels in these wells correlate with variations in the water table through time. Each of these data sets from the weather, river and well will provide a new view of how the hydrologic cycle functions at Rice Creek. Expected outcomes include a long and continuous record of streamflow and well height data which will provide new insights and opportunities for student research projects and teaching opportunities in several courses at SUNY Oswego (GEO 430 Hydrogeology and GEO 450 Geomorphology). I will work with students and the Rice Creek Field Station to make stream gauging data available on the web page as a complement to weather station data. The long term monitoring data collection proposed will be an important resource for student learning about the hydrologic cycle and will also provide data of interest to the general public. As these data sets grow over time, they will provide a foundation for research projects that will lead to future publications. This work will also augment the SUNY Oswego Grand Challenges topic "clean water for all" providing an opportunity to further highlight activities at the field station and its ongoing contribution to student and public learning.</p> | |
| 2017 | Development of a field guide for common birds of Rice Creek Field Station | Joanna Follett (S) | Peter Cardone | SUNY Oswego | <p>This project would be completed over one year photographing the birds at Rice Creek Field Station with the result being a complete field guide providing identification information for both seasonal and resident birds. The completed field guide would be for printed use at the field station providing education not only to SUNY Oswego students but anyone from the community who visits the field station by helping them identify the bird species they may see.</p> | ornithology |
| 2017 | Measuring toxic effect of atrazine on fresh water mussels (<i>Elliptio complanata</i>) | Poongodi Geetha-Loganathan | | SUNY Oswego | <p>Atrazine, from the triazine group, is a herbicide used for weed control. It is used extensively worldwide and thus is found in rivers, lakes, ground waters, reservoirs and even in rainwater. Through the consumption of contaminated water or contaminated food, public can be exposed to Atrazine. It is an endocrine disruptor and bioassays have illustrated that it is embryotoxic and lethal for adults. Atrazine is threatening to various aquatic animals and those who feed on these aquatic animals. Studying the toxicity of this herbicide will be helpful in the prevention of contamination of water bodies in the future. The freshwater mussels used for this project will be collected from Rice Creek and cultured in controlled laboratory conditions. The control group in our experiment will be set under these optimal conditions. The experiment group will also be set under these conditions with the addition of Atrazine treated water. Each group will contain at least 3-5 mussels and the treatment will be administered for the duration of 2-3 weeks. To analyze for toxicity, mussels will be removed from the cultures and their organs will be collected. Gills, mantle, muscles, lungs and gonads will be examined to analyze toxicity. Samples will be used for biochemical and physiological analysis.</p> | ecology |

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| 2017 | Effects of seasonality on the foraging patterns of the North American beaver, <i>Castor canadensis</i> , at Rice Creek Field Station | Imran Razik (S) | Maria Sagot | SUNY Oswego | Understanding the effects of environmental factors on animal behavior have fascinated animal ecologists for decades. Often, these effects manifest as changes in home range, foraging patterns, and territoriality. However, relatively little is known about how animals that inhabit more than one habitat, such as semiaquatic animals, respond to periodic environmental changes. Here, we aim to examine how the North American Beaver (<i>Castor canadensis</i>) responds to seasonal variation in resource dynamics. Over the course of one year, land cover and vegetation will be surveyed and correlated with radio telemetry movements, to determine seasonal changes in home range and foraging patterns. Moreover, camera traps will be used to create activity patterns as well as biodiversity indices. With this information, we will gain valuable insight into the seasonal movements of <i>C. canadensis</i> , allowing us to better understand the impact of this species on the local biodiversity and long-term effects at Rice Creek pond. | mammalogy |
| 2017 | Field Guide for local insects | Rocco Saya (S) | | Oswego County Health Department | The goal I have is to create an insect field guide for Rice Creek Field Station. I have been photographing and studying local insects for over 7 years now. I have an existing library of high quality photographs I've already taken with my own independent study. My first objective would be to organize my existing library more fully and to document relevant and educational information about the various orders of these insects (and some of their behavior.) Secondly, I would also create a corresponding web site that would complement the field guide, whereas the web site would have additional info/data/photographs of insects (the field guide can have links to the corresponding web site.) The web site could evolve through time with me and others adding to it. Lastly, my plan is to find/photograph/document particular additional insects I have not yet photographed or observed directly in the field. I will do my best to make the field guide educational, interesting and well balanced...with examples from as many orders of insects as time permits and the use of my existing library. | entomology |
| 2017 | Sex and immunity in <i>Lithobates clamitans</i> : is ranavirus a sexually transmitted pathogen or are females more susceptible to disease? | Sofia Windatn, Jennifer Olori, Nathan Mckean (S), Jason Lowery (S) | | SUNY Oswego | Data from a long term study on amphibian disease in RCFS and Oswego Co has revealed that ranavirus infection is skewed between the sexes, with females testing positive more frequently than males. Our study seeks to elucidate whether this sex bias results from differences in the amount of contact males and females have with other individuals during activities such as mating, or if females are simply more susceptible to infection due to lower innate immunity than males. We will approach this question by sampling male and female adult <i>Lithobates clamitans</i> (green frog) at an RCFS vernal pool one to two times per week for the entire mating season of the species (May through August). Tissue specimens and blood will be collected nonlethally from individuals and analyzed for the presence of ranavirus along with hormone levels (corticosterone) and hemolytic capabilities that approximate immune function (). Additionally, we will have at least two undergraduate students assisting in this study, learning valuable wildlife field and lab techniques. | herpetology |
| 2016 | Correlating MHC IIB Diversity to Susceptibility to Bd and Ranavirus in Green Frogs | Kimberly Anderson (S) | Sofia Windstam | SUNY Oswego | This research proposes studying the MHC allele variants in green frogs and correlating them with pathogens associated with amphibians in Oswego County (Ranavirus and Bd). Green frogs may be a carrier for Ranavirus and Bd due to research that shows that significant portions of their population can be infected with these pathogens and show no signs (Gray et al., 2007; Richards-Hrdlicka et al., 2013). However, there is little research on green frogs despite being abundant in local ecosystems. The target population of this study is a sample set of green frogs (n=238) taken from the Rice Creek Field Station and Independence Park, over the course of four years (2012-2015). DNA has already been extracted from animal tissue samples and all animal samples have been assessed for Bd and Ranavirus infection. | herpetology |

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| 2016 | Effects of phenolic compound concentrations on the winter foraging behaviors of mammals and birds on Staghorn Sumac | Zachary Bennett (S) | Mike Schummer | SUNY Oswego | Staghorn Sumac provides winter foraging opportunities for local mammals and birds. However, foraging seems to be limited until late winter, after which seeds are rapidly depleted. It is proposed this delayed foraging is a result of high concentrations of phenolic compounds that act as a foraging deterrent, until they are degraded through freeze/thaw processes. Using high performance liquid chromatography, this study will analyze the change in concentrations of four phenolic compounds throughout winter, while keeping an active foraging index of the sites. We expect to see an inverse correlation between the levels of phenolic compounds and the intensity of foraging. | ecology |
| 2016 | Host-Parasite Coevolution and the Parasite Spillover and Spillback Hypotheses: Final Report | Andrew McElwain, Jaelyn Lovell (S) | Andrew McElwain | SUNY Oswego | This project will continue to study specimens collected during the summer of 2015. We will survey the stream bottom for snails at each of the two collection sites. Specimens will be collected from Rice Creek near the Route 89 crossing (N43°26'32.37" W76°33'51.51") and the Thompson Rd. crossing (43°25'50.27" W76°32'17.12"). A sample of 50 individuals of each species will be collected for this study. Necropsies and histology sampling will occur between collection events. However, molecular specimens may not be processed until a sufficient sample size from each species has been obtained. Tissue samples and parasites may not be processed for further study until August or September. Photomicrographs of worms and tissue samples from uninfected and infected individuals may be obtained by August 2016. | mollusks |

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| 2016 | Drosophila suzukii gut microbiota study | Peter Newell | | SUNY Oswego | Drosophila suzukii, also known as Spotted Wing Drosophila (SWD), is an invasive pest of fruit crops. This close relative of the common fruit fly Drosophila melanogaster arrived in California from South East Asia in 2008, then spread rapidly across the continent and was first seen in New York state in 2011 (RotaStabelli et al., 2013). The NY monitoring program now presumes that the pest has a state-wide distribution, as SWD was found in 89% of the counties monitored in 2015, with 90% of all sampling sites reporting catches (Cornell University Cooperative Extension, 2015). This represents a serious threat to NY's fruit industry, as SWD has caused an estimated \$500M of damage annually since its arrival in the USA with yield losses >50% in heavily affected areas (Bolda et al., 2010). A recent study in France found that SWD exhibits a broad trophic niche, targeting the fruits of over 30 plant species belonging to 17 families (Poyet et al., 2015). Therefore it is likely their impact on ecosystems spreads beyond managed agricultural areas. Research into the biology of SWD and its impact on local ecosystems is urgently needed to develop strategies for mitigating this invasive pest. | entomology |
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| 2016 | Quantifying strands of ash (<i>Fraxinus</i> spp.) in anticipation of the arrival of the Emerald Ash Borer (<i>Agrilus planipennis</i>) and subsequent forest succession | Phillip Perriello (S) | Eric Hellquist | SUNY Oswego | Invasive species that colonize new geographic ranges can have detrimental ecological and economic consequences (Mack et al. 2000). Invasive herbivorous insects can damage native plant communities and initiate changes in plant succession. The Chestnut blight (fungus), Dutch elm disease (fungus), and the Emerald Ash Borer (insect) are examples of pathogenic species that have had devastating effects on North American forests. Rice Creek Field Station (RCFS) ash stands are vulnerable to the destructive effects of the Emerald Ash Borer (EAB), <i>Agrilus planipennis</i> . This study will initiate a forest community survey that will provide a baseline comparison for RCFS forest before and after eventual disturbance of ash (<i>Fraxinus</i> spp.) stands by the EAB. These plots will provide opportunities for future researchers to study the effects of the EAB on forest succession at Rice Creek and will be modeled after similar studies in the midwest and northeast (e.g. Pugh et al. 2011). | ecology |
| 2016 | Vasohibin 1 acts as a negative regulator of angiogenesis during turtle embryogenesis | Poongodi Geetha-Loganathan | | SUNY Oswego | Angiogenesis is the formation of neovessels, is inevitable for the embryo to develop normally. It regulated by the local balance between angiogenesis stimulators and inhibitors. A number of such endogenously expressed regulators are identified to play roles during blood vessel formation in vertebrates. However, information on embryonic blood vessel formation in developing turtles still needs to be elucidated. Recently we initiated studies on blood vessel development during embryogenesis in snapping and painted turtle species. Here we extend our work on turtle blood vessel development to study the expression of Vasohibin 1 protein during early embryogenesis <i>in vivo</i> and to investigate the effect of Vasohibin on embryo development <i>in vitro</i> . | developmental biology |

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| 2016 | Effects of seasonality on the foraging behavior of Northern Flying Squirrel (<i>Glaucomys</i>) at Rice Creek Field Station | Maria Sagot, Miranda Nelson (S), Christian Kalinowski (S) | Maria Sagot | SUNY Oswego | <p>Oswego, NY presents extreme weather conditions that can challenge local species survival. Due to harsh and long winters in the area, we expect that species that have been able to adapt to these conditions, modify their foraging behavior in order to forage optimally. This might be the case in the Northern flying squirrels, <i>Glaucomys sabrinus</i> Northern flying squirrels typically die from harsh conditions or predators such as owls, hawks, coyotes, skunks, wolves, and domestic cats (Wells-Gosling, 1985). The aim of this study is to examine the effects of weather and food availability, on the foraging behavior of <i>G. sabrinus</i>. Here, we will use the optimal foraging theory to determine if <i>G. sabrinus</i> forage differently at the end of the winter, where temperatures are still low and food availability is scarce, compared to summer and fall seasons. If food is not available nearby, it is necessary to travel long distances in order to get access to these resources. Thus, it is predicted that <i>G. sabrinus</i> will increase its foraging range in colder months, as food availability is low, compared to warmer months, in order to maximize fitness. Moreover, during colder months, <i>G. sabrinus</i> will feed on different food sources, based on availability. Tracking <i>G. sabrinus</i> using telemetry will allow us to determine seasonal changes in their foraging area and diet, based on food availability. Our results will help to explain how locally adapted species are able to survive in harsh conditions.</p> | mammalogy |
| 2016 | Isolation, Culture and Genetic Modification of Sea Lamprey Cells for Investigation of a Novel Strategy for Invasive Lamprey Control | Kaitlyn Tkachuk (S), David Dunn | David Dunn | SUNY Oswego | <p>Sea lampreys were first observed in Lake Ontario in the mid-1800s (Larson, et al., 2003). While some controversy exists regarding the native range of sea lampreys, it is known that they are not native to the Great Lakes above Lake Ontario and that extensive control measures are required to prevent collapse of prey fish populations in Lake Ontario and Lake Champlain (Christie, & Goddard, 2003). Through the mid twentieth century, sea lampreys have had a devastating effect on populations of lake trout (<i>Salvelinus namaycush</i>) and other prey fish, affecting the overall balance of the Great Lakes ecosystems (Bryan, et al., 2005). The goal of this research is to produce immortalized sea lamprey cell lines, and use nascent genome engineering CRISPR/Cas9 gene drive systems to mutate gonadotropin releasing hormone (GnRH) gene sequences in lamprey cells.</p> | developmental biology |
| 2015 | Host-Parasite Coevolution and the Parasite Spillover and Spillback Hypotheses | Andrew McElwain | | SUNY Oswego | <p>North American freshwater mollusks are imperiled and some declines may be due to the presence of invasive species such as the zebra mussel (<i>Dreissina polymorpha</i>). Invasive mollusks may threaten native mollusks through competition or fouling. However, the role of parasites in such interactions remains poorly understood. Potentially parasites of non-native species may become established in native host species (parasite spillover) and or parasites of native species may colonize non-native host species (parasite spillback). Aquatic bivalves and gastropods of Rice Creek will be histologically compared to determine if spillover or spillback of parasites is associated with immunological responses.</p> | mollusks |

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| 2015 | Effects of Population Density on Individual Behavioral Responses | Heather Eldridge (S) | Maria Sagot and Karen Sime | SUNY Oswego | This study intends to determine how population density affects individual differences in behavior. We predict that: 1. Individuals from high-density populations will exhibit bolder behaviors. 2. Boldness will be fixed within populations. 3. No differences in boldness between sexes. 4. Strong correlation between boldness and relatedness. To test our predictions, we will measure foraging and hiding time in rodents belonging to different population densities, when exposed to predator scent. Currently, most of the work in behavioral differences has focused on differential genetic or resource use. Our work will elucidate the importance of intraspecific variation in ecological and evolutionary processes. | ecology |
| 2015 | Early Embryonic Vascular Development in Turtles | Poongodi Geetha-Loganathan | | SUNY Oswego | Vascular endothelial growth factor (VEGF) family through its tyrosine kinase receptors (VEGFRs) controls growth and maintenance of blood and lymphatic vascular system. Growth and development can occur over a wide range of physical conditions in turtles. Blood vessel formation is inevitable for the embryo to develop normally. However, information on embryonic blood vessel formation in developing turtles is lacking. Here, we initiated investigation on least addressed area, vascular development in turtle embryos. To begin, we will analyze the VEGFR2 expression pattern by whole-mount in situ hybridization during <i>Chrysemys picta</i> (painted turtle) and <i>Chelydra serpentina</i> (snapping turtle) development. Our results will confirm the angiogenic potential of the mesoderm to prove that VEGFR2 expressing cells represent multiple pools of mesodermal precursors of the hematopoietic and angiopoietic lineages. | developmental biology |
| 2015 | Survey of Rice Creek Amphibians for Emerging Infectious Diseases and Correlated Environmental Parameters | Sofia Windstam and Jennifer Olori | | SUNY Oswego | The purpose of the proposed research is to explore prevalence of two amphibian pathogens, <i>Batrachochytrium dendrobatidis</i> and ranavirus, in the context of environmental variables that help explain the emergence of both pathogens. In order to address the goal samples will be collected from caught amphibians and subjected to molecular diagnostics to determine if animals carried either pathogen. Coupled with this, environmental data including temperature, humidity, pH, and salinity will be collected and correlates with pathogen prevalence will be explored. Additionally, multiple undergraduate students are anticipated to be trained in relevant techniques using Rice Creek Field Station as their field site. | herpetology |

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| 2015 | Altered Cell Proliferation- a Mechanism Responsible for Unique Body Form in Turtle | Sarah E. Korcz (S) | Poongodi Geetha-Loganathan | SUNY Oswego | Turtles are interestingly important organisms among all the amniotes in studying developmental biology due to the presence of shell that pose a unique skeletal and muscular pattern. Identifying the developmental factors that cause unique shelled pattern would further our understanding of the evolutionary origin of the turtles. The application of modern developmental assays continues to be challenging in turtles, research on gene regulatory networks associated with shell development remains incomplete. With an objective to figure out the mechanism underlying the development of unique skeletal and muscular patterning in turtles, proliferating cells were mapped using BrdU labelling. In addition rate of cell death is quantified to compare the differences and similarities between snapping and painted turtle in comparison with chicken. | developmental biology |
| 2014 | Measuring Black-legged Tick and Lyme Disease Abundance in Relation to Deer Exclusion at Rice Creek Field Station | Katherine Hilburger (S) | Eric Hellquist | SUNY Oswego | Population densities of ticks of different life stages inside and outside deer enclosures at Rice Creek Field Station were surveyed and then analyzed for the presence of Lyme disease. White-footed mice were also surveyed inside and outside the enclosures to help determine any connections between mouse and tick abundance and deer exclusion in relation to infected ticks. | arachnology |
| 2014 | The Study of Taphonomic Effects on Bone and Flesh from Avian Scavenging at SUNY Oswego Rice Creek Field Station | Brianna Robinson (S) | Kathleen Blake | SUNY Oswego | Natural decomposition of pigs placed in various habitats was investigated in colder and warmer periods [fall/winter and winter/spring] with an emphasis on avian scavengers to examine the taphonomic effects on the pig carcasses, thereby expanding the knowledge of taphonomic modifications left on human remains. | bio-forensics |
| 2014 | Local Museum Specimen Screening for the Presence of Batrachochytrium dendrobatidis | Calee Wilson (S) | Jennifer Olori, Sofia Windstam, Christopher Chandler | SUNY Oswego | The purpose of this study was to determine when Batrachochytrium dendrobatidis first became present in local Central New York species of amphibians by sampling preserved specimens in the Rice Creek Field Station collection. | herpetology |
| 2014 | Prevalence of Batrachochytrium dendrobatidis, Casual Agent of Amphibian chytridimycosis, Oswego County in 2012 | Jennifer Olori and Sofia Windstam | | SUNY Oswego | Support for publication of research conducted at Rice Creek Field Station on the longterm monitoring of amphibians. | herpetology |

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| 2014 | Photographic Archive of Rice Creek Field Station Specimens | Jessica Kretschmann (S) | Julieve Jubin | SUNY Oswego | The purpose of this project was to photographically archive the skeleton collection as well as the mounted collection, doing work on correcting the loss of coloration in many of these specimens due to age. This would be accomplished through the use of photo editing. The photographs will be useful to faculty and students to supplement their review of the actual specimens. | collections |
| 2014 | Somite and Limb Myogenesis in the Turtles | Poongodi Geetha-Loganathan | | SUNY Oswego | This study compared somite muscle patterning during the development of turtle and chick embryos. | developmental biology |
| 2014 | Use of iButton Temperature and Humidity Sensors and Remote Cameras to Assess Colonization of Artificial Nest Boxes by Wood Ducks | Robert Katz (S) | Michael Schummer | SUNY Oswego | The purpose of this study was to determine the influences of temperature and humidity on nest box selection by female wood ducks. | ornithology |
| 2013 | Survey and Mapping of Vernal Pools at Rice Creek Field Station | Alan Harris | | SUNY Oswego | The purpose of this project was to identify, locate, assess and map known and potential vernal pools at Rice Creek Field Station. This information will draw interest to more research on vernal pools and their ecological importance. | ecology |

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| 2013 | A Study of Algal Communities in Spring Vernal Pools at Rice Creek | Amber Snyder (S) | Cynthia Tant | SUNY Oswego | Vernal pools are small, seasonal ecosystems commonly found during the spring months in the northeastern US and are important habitats for many sensitive species. Biofilm communities in five pools of varying size and location at Rice Creek Field Station were examined. Ceramic tiles were submerged for colonization and analyzed for biomass and community composition; physical and chemical characteristics of each pool were also monitored. Cyanophyta (cyano-bacteria) was the most abundant division in each pool, likely due to its ability to colonize new substrates. Although each vernal pool had unique physical characteristics, the biofilm community remained similar among pools. | ecology |
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| 2013 | Developing Genomic Resources for Ecological and Evolutionary Studies of Rice Creek Isopods | Christopher Chandler | | SUNY Oswego | <p>The focus of our research consisted of two things: First, to test whether Wolbachia affects <i>T. rathkei</i> the same as it affects other species of terrestrial isopods. <i>T. rathkei</i> is a species of isopods that is commonly founded at Rice Creek Field Station.</p> <p>Wolbachia is a microscopic parasite that affects its host in many ways, among them includes altering the development of male organisms and causes them to develop as females. This parasite is found in a lot of organisms, including many other orders of organisms in the arthropoda phylum. We can understand more of other organisms in the same phylum by studying Wolbachia in <i>T. rathkei</i>. Since little research has been done on <i>T. rathkei</i>, or terrestrial isopods as a whole, we are hoping to be the first researchers to create a genome for this species, and create preliminary data for further study. Second, to find the sex linked genes in <i>T. rathkei</i>. The sex genes of <i>T. rathkei</i> are still relatively young on the evolutionary scale comparing to humans. By studying the sex linked genes of <i>T. rathkei</i>, we hope to understand more about the evolution of human's sex linked genes.</p> | genetics |
| 2013 | Screening Rice Creek Amphibian Populations for Infectious Ranavirus | Rachel Cary (S) | Jenifer Olori, Sofia Windstam, Christopher Chandler | SUNY Oswego | Monitoring of local amphibian populations and DNA testing for chytrid fungus and ranavirus. | herpetology |
| 2013 | Mapping of Tick Abundance and Lyme Disease Across Rice Creek Field Station Habitats | Zuzi Salais (S) | Eric Hellquist, Tim Bruan | SUNY Oswego | Collection of ticks in RCFS habitats over a 6 month period was done to speciate, to determine life stage density, and to determine the prevalence of <i>Borrelia burgdorferi</i> using molecular methods. | arachnology |

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| 2012 | Seasonal Movements and Habitat Use by Snapping Turtles (<i>Chelydra serpentina</i>) and Midland Painted Turtles (<i>Chrysemys picta marginata</i>) at Rice Creek Field Station, Oswego, New York | Daniel Frick (S) | Peter Rosenbaum | SUNY Oswego | The purpose of this research was to observe and analyze the seasonal movements and habitat use of the Common Snapping Turtle (<i>Chelydra serpentina</i>) and the Midland Painted Turtle (<i>Chrysemys picta marginata</i>) at the Rice Creek Field Station in order to better understand their ecology and habitat use. To accomplish this, two individuals (one male and one female) of each species were monitored via radio telemetry from March-October 2012. This study determined that there are differences in activity patterns, home range, and habitat use of snapping turtles and painted turtles. Furthermore, significant differences in activity between male and female turtles were observed in this study. | herpetology |
| 2012 | Rice Creek – Recordings of an Educational History of a Field Station and its Advancement for the Future | Dineece Howell (S) | Cleane Medeiros | SUNY Oswego | This work will serve to inform others on the diversity of projects taking place at the field station which inspires the use of technology, observations, predictions, experimentation, data collection and important conclusions. We will show Rice Creek in one material for future research and showcasing to encourage greater projects for the campus and for the community. | history |
| 2012 | Pilot Survey of Rice Creek Amphibians for the Prevalence of the Pathogen <i>Batrachochytrium dendrobatidis</i> | Jennifer Olori, Sofia Windstam | | SUNY Oswego | Monitoring of local amphibian populations and DNA testing for chytrid fungus and ranavirus. Although the fungus <i>Batrachochytrium dendrobatidis</i> (Bd) is known to play a large role in global amphibian declines, limited data exist on the prevalence of this pathogen in local populations. In a collaborative effort by multiple faculty members and 15 student researchers, DNA was collected from 81 amphibians at Rice Creek Field Station between April and November 2012 as part of a long-term amphibian monitoring study. Samples were tested for the presence of Bd using end-point PCR. Approximately 30% of the individuals, spanning six species, tested positive for infection. This is the first time that Bd was detected in Oswego County. | herpetology |
| 2012 | Using Molecular Tools to Link Plant Community Ecology, Microbial Ecology and Nitrogen Cycling in Freshwater Marshes of Rice Creek Field Station. | Josh Dranoff (S), Melissa Maurer (S) | Eric Hellquist, Sofia Windstam | SUNY Oswego | The overall goal of our study was to attempt to utilize microbial DNA extracted from the soil in order to gain a better understanding of the microbiota associated with both <i>Typha</i> and <i>Lythrum</i> , especially looking at denitrifying bacterial communities. We were also hoping to determine whether or not there were any major differences in the microbiota of <i>Typha</i> and <i>Lythrum</i> that could possibly give one species more of a competitive advantage over the other. Our hypothesis was that the microbial community composition would be different between the two species since in most cases, microbiotas tend to be different depending upon the species growing in the same vicinity and climate. | ecology |

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| 2012 | The Spatial Distribution of Lyme Disease Carrying Ticks at Rice Creek Field Station | Kasandra Whitney (S), Zuzi Salais (S) | Tim Braun | SUNY Oswego | Lyme disease is a human health threat throughout the North Eastern United States. This project analyzed the geographic distribution of the Lyme disease vector, the black legged tick, <i>Ixodes scapularis</i> , within Rice Creek field station. The frequency of ticks infected with the bacterium that causes Lyme disease, <i>Borrelia burgdorferi</i> , was determined using polymerase chain reaction. Ticks were collected in three different biomes: forest, meadow, and boundary. A total of 213 ticks were collected. One adult tick has tested positive for <i>Borrelia</i> . This geographical information can be used to gauge human health risk in different areas of Rice Creek field station. | arachnology |
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| 2012 | Screening Amphibian Populations in Oswego County, NY for Infectious Ranavirus | Rachel Cary (S) | Jennifer Olori, Sofia Windstam | SUNY Oswego | Ranavirus is an emergent viral disease that has had a major impact on amphibians. The objective of this study was to determine whether this virus is present in amphibian populations within Oswego County, NY. Between April 2012 and October 2013 I examined 226 amphibians, including specimens from ten different species. During 2012, 25.0% of amphibians were positive for the virus, and in 2013 22.8% tested positive across three field sites. This is the first time ranavirus has been detected in Oswego County and it seems to have remained stable at a fairly high prevalence during this period of sampling. | herpetology |
| 2012 | Mapping of Tick Abundance and Lyme Disease Across Rice Creek Field Station Habitats | Zuzi Salais (S) | Eric Hellquist, Tim Braun, Karen Sime | SUNY Oswego | Collection of ticks in Rice Creek Field Station habitats took place over a six month period to speciate, to determine life stage density, and to determine the prevalence of <i>Borrelia burgdorferi</i> using molecular methods. | arachnology |
| 2011 | Continued Investigation of Groundwater-Surface Water Interaction in Glacial Till Using Electrical Resistivity Methods at Rice Creek Field station | David Valentino | | SUNY Oswego | NA | geology |
| 2011 | Publication of Field Determination of Age in Northern Short-tailed Shrews (<i>Blarina brevicauda</i>) at Rice Creek Field Station | Sara Rensing (S) | Diane Chepko-Sade | SUNY Oswego | Support for publication of research. | mammalogy |
| 2010 | Understanding the Ecological Effects of <i>Typha x glauca</i> in Littoral Marshes at Rice Creek Field Station | Brad Wells (S) | Eric Hellquist | SUNY Oswego | Measurements were taken of community ecology parameters (species richness, living biomass, dead biomass etc...) associated with the colonization of two dominant wetland species, <i>Lythrum</i> and <i>Typha</i> , at Rice Creek Field Station. | ecology |
| 2010 | Four Dimensional Electrical Resistivity Study of the Dam on Rice Creek Pond to Assess and Monitor Structural Integrity | David Valentino | | SUNY Oswego | NA | geology |

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| 2010 | A Study of <i>Papilio polyxenes</i> : Seeking Evidence for a Genetic Basis for their Tolerance of Toxins found in <i>Aethusa cynapium</i> | Georgia Keene (S) | Karen Sime | SUNY Oswego | The degree to which black swallowtails can metabolize toxins may differ genetically and thus may be passed on to these butterflies' offspring. The ability of black swallowtail caterpillars to tolerate toxins found in carrot, water parsnip, and fool's parsnip will be investigated. Two generations of swallowtail larvae were raised on carrot and fool's parsnip in the lab and survivorship rates were compared to see if they suggest a genetic component for survival on these toxic plants. Two groups of swallowtail larvae were raised on water parsnip, one in the lab and one in the field at Rice Creek to compare survivorship between the two groups. | entomology |
| 2010 | Heat and Mass Budget of Rice Creek Pond | Jamie Kettle | | SUNY Oswego | NA | hydrology |
| 2009 | Surficial Geology Survey of the Rice Creek Field Station Grounds | David Valentino | | SUNY Oswego | Systematic analysis of surficial materials in the field. Collection of representative samples. Generation of a surficial geology map. | geology |

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| 2009 | Evolutionary Mechanism via Invasion and Hybridization in Conspecific <i>Typha</i> (cattail) at Rice Creek Field Station | Kamal Mohamed, Clara Kim (S) | | SUNY Oswego | The primary goal of this project was to define the occurrence of introgressive hybridization, and assess the genetic variability and identities of different species of the genus <i>Typha</i> at the Rice Creek Field Station. The molecular analysis method selected was RAPD-PCR. The results show that there is situation of hybridization between the invasive <i>T. angustifolia</i> and the native <i>T. latifolia</i> , and the pattern seen in instance of hybridization is the asymmetrical introgression between hybrids and <i>T. latifolia</i> . | botany |
| 2009 | Interactions Among <i>Lythrum salicaria</i> , Native Bird Species and Bio-Control Beetles | Kristi Wilkinson (S) | Eric Hellquist | SUNY Oswego | Plots dominated by <i>Lythrum salicaria</i> and control plots without <i>Lythrum salicaria</i> were monitored for wetland bird activity, as well as monitoring <i>Lythrum</i> plants for beetle damage under garden netting and outside of garden netting in <i>Lythrum salicaria</i> dominated plots to observe if birds potentially use the bio-control beetles on the plants as a food source. The goal of the project was to determine if there was a difference in activity in and utilization of plots dominated by <i>Lythrum salicaria</i> and those without the plant by native bird species, and if there were differing amounts of beetles and damage under and outside of netting. | ecology |
| 2008 | Groundwater – Surface Water Interaction in Glacial Till using Electrical Resistivity Methods and Vibracore | David Valentino | | SUNY Oswego | NA | geology |

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| 2008 | Performance of Black Swallowtail Larvae on Different Food Plants | Karen Sime | | SUNY Oswego | The purpose of this project was to determine the relative suitability of various native and introduced Apiaceae as food plants for the black swallowtail; to determine whether there exist tradeoffs in performance and susceptibility to natural enemies when feeding on different plants; and to measure the impact of swallowtails and other insect herbivores on <i>D. carota</i> fitness. | entomology |
| 2008 | The Effect of Native Parasitoids on <i>Sirex noctilio</i> at Rice Creek Field Station | Melissa Stimpfle (S) | Karen Sime | SUNY Oswego | Lindgren funnel traps and malaise traps were set up in two conifer-dominated forest sites at Rice Creek. Trapping stopped over the winter and resumed in spring 2009. In spring 2009, samples of infested wood were taken to the laboratory to try to rear parasitoids. Trap data will provide insight on the seasonality and abundance of the invasive sawfly <i>Sirex noctilio</i> . It will also help us characterize the native sawfly community (of which nothing is currently known) that <i>S. noctilio</i> threatens to displace. Similarly, little is known of parasitoids that may potentially colonize <i>S. noctilio</i> and lessen the impact of the invader. Trap data and rearing of <i>S. noctilio</i> from infested wood will provide baseline information on its natural enemies. | entomology |
| 2008 | Field Determination of Age in Northern Short-tailed Shrews (<i>Blarina brevicauda</i>) at Rice Creek Field Station | Sara Rensing (S) | Diane Chepko-Sade | SUNY Oswego | Trapping Chipmunks, Meadow jumping-mice and Short-tailed Shrews with PIT tags to identify individuals and compile life histories. | mammalogy |
| 2008 | A Comparative Survey of Gall Makers in Natural and Urban Environments | Wendy Paterson (S) | Karen Sime | SUNY Oswego | Insect galls were surveyed on maple, ash, goldenrod trees at RCFS and downtown Oswego. Density of galls on the plants were measured in situ and sample of galls were taken to lab to rear the gall makers and any parasitoids. | ecology |

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| 2007 | Groundwater – Surface Water Interaction in Glacial Till using Electrical Resistivity Methods | David Valentino | | SUNY Oswego | NA | geology |
| 2007 | Breeding Birds in Old Fields in Central New York State in Relation to Field Mowing | Peter G. Weber, Joel Ralston (S) | | SUNY Oswego | The study of breeding bird communities in old field ecosystems has yielded important insight into changes that occur to avian communities during secondary succession. Early cross-sectional studies showed that breeding bird density and species diversity increases with ecological age from bare ground of recently abandoned farm fields through shrub stages to forest. | ornithology |

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| 2007 | Field Determination of Age in Northern Short-tailed Shrews (<i>Blarina brevicauda</i>) at Rice Creek Field Station | Sara Rissing (S) | Diane Chepko-Sade | SUNY Oswego | This research was conducted to validate an aging technique using repeated measures of the incisor pigment length on marked specimens of northern shorttailed shrew at Rice Creek Field Station in order to assign actual ages to individuals rather than relative ages. | mammalogy |
| 2006 | A Preliminary Study of Forensic Entomology in Central New York | Ann Bunch, Heather Kozuba (S) | | SUNY Oswego | Assessed the various types of carrion insects and their succession rates during decomposition studies at Rice Creek Field Station. Species identification, determining life stages and their timing will enable a determination of a standard for PMI in Central New York. | bio-forensics |
| 2006 | Assessing the Internal Architecture of Glacial Till using Electrical Resistivity Techniques, Rice Creek Field Station | David Valentino | | SUNY Oswego | High-resolution electrical resistivity surveys for the area that covers the western flank of the drumlin at Rice Creek Field Station were conducted to document detailed variation in shallow subsurface materials to better understand controls on local hydrogeology, and to better understand the complex materials variations internal to the local glacial till. | geology |
| 2006 | Impact of Botfly Infestation on the Life histories of Two Small Mammal Species at Rice Creek Biological Field Station | Diane Chepko-Sade, Matthew Volny (S), Sara Rissing (S) | | SUNY Oswego | The presence or absence of botflies was compared with evidence of lactation in female <i>Tamias striatus</i> to see if there was a relationship between fall botfly infestation and participation in the spring breeding cycle. Data collection was concentrated in spring and fall, comparing weights of emerging chipmunks and reproductive status. | mammalogy |
| 2006 | Nesting Bird Assemblages in Old Fields at the Rice Creek Field Station in Relation to Field Mowing: A Second Year | Peter Weber, Joel Ralston (S) | | SUNY Oswego | A continuation of the 2005 study to increase the database describing the kinds and numbers of breeding species, relating breeding old field species to vegetation characteristics, and regarding late breeding species in which breeding may be threatened by mowing. | ornithology |
| 2005 | Replace Meteorological Instruments at Rice Creek Field Station | Al Stamm | | SUNY Oswego | A new weather station that archived data to a computer was installed so that researchers, students and the public can determine current and past weather. | meteorology |
| 2005 | The Impact of Cold Climate on the Decomposition Process: Phase II | Ann Bunch | | SUNY Oswego | A continuation of the 2004 study until skeletonization was complete. An expansion of the 2004 study without any enclosures to encourage scavenging activity was conducted. | bio-forensics |

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| 2005 | Nesting Bird Assemblages in Old Fields at the Rice Creek Field Station in Relation to Field Mowing | Peter Weber, Joel Ralston (S) | | SUNY Oswego | Systematic sampling of the upper and middle fields in one year of a four year mowing cycle was done to assess the kinds and numbers of nesting species of birds associated with the mowing cycle and to relate territory size to correlates of habitat quality in old field nesting species at RCFS. | ornithology |
| 2005 | A Survey of the Aquatic Insects of Rice Creek and Select Water Quality Variables | Rick Back | | SUNY Oswego | This project provided a better understanding of the occurrence, abundance and distribution of aquatic insects at Rice Creek. Baseline data will be established for ongoing monitoring of the aquatic environments associated with the Rice Creek Field Station including regional patterns of aquatic insect populations and their application to water quality assessment. | limnology |
| 2004 | The Impact of Cold Climate on the Decomposition Process | Ann Bunch | | SUNY Oswego | This project represented the first systematic study of decomposition in cold climate. Three study areas in distinct microenvironments were monitored. Data were collected and qualitative notes and photographs were taken on the decomposition process. | bio-forensics |
| 2004 | Rice Pond Microorganisms: Genetic, Metabolic, and Phological Identification | Anthony Ouellette | | SUNY Oswego | Microbial ecology research of aquatic ecosystems in Rice Pond were investigated. | ecology |
| 2004 | Training in the Wild: The Rites of Passage of Field Researchers | Brad Way | | SUNY Oswego | An ethnographic study of biologists in training during summer field research at Rice Creek Field Station was conducted to examine how scientists in training make the transition to researchers. | philosophy |
| 2003 | Small Mammal Survey at Rice Creek Field Station: Year 8 | Diane Chepko-Sade | | SUNY Oswego | The AnaBat amplifier was used to census bats around Rice Pond to add bats to the systematic survey of small mammals at Rice Creek Field Station. | mammalogy |
| 2003 | Rice Creek Field Station Butterfly Population Study: Year 8 | Peter Weber, Michael Holy | | SUNY Oswego | The Rice Creek Butterfly Project is what the lepidopterist H.K. Clench referred to as a "local study": that is, an intensive long term investigation of a small area. The main aim of the project continues to be characterize the Rice Creek Field Station's butterfly community over seasons, within habitats and between seasons. | entomology |
| 2002 | Small Mammal Survey at Rice Creek Field Station: Year 7 | Diane Chepko-Sade | | SUNY Oswego | A systematic survey of small mammals at Rice Creek Field Station was conducted. | mammalogy |
| 2002 | Rice Creek Field Station Ornithology Collection: Year 2 | Garr Owens (S) | George Maxwell | SUNY Oswego | Database of Rice Creek Field Station preserved bird collection was established. | collections |
| 2002 | Rice Creek Field Station Turtle Populations | Nicholas Reed (S) | Peter Rosenbaum, Andrew Nelson | SUNY Oswego | Database of Rice Creek Field Station turtle population was established. | herpetology |

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|------|--|--|--|------------------------------------|--|-------------|
| 2002 | Rice Creek Field Station Butterfly Population Study: Year 7 | Peter Weber, Michael Holy | | SUNY Oswego | The Rice Creek Butterfly Project is what the lepidopterist H.K. Clench referred to as a "local study": that is, an intensive long term investigation of a small area. The main aim of the project continues to be characterize the Rice Creek Field Station's butterfly community over seasons, within habitats and between seasons. | entomology |
| 2001 | Small Mammal Survey at Rice Creek Field Station: Year 6 | Diane Chepko-Sade | | SUNY Oswego | A systematic survey of small mammals at Rice Creek Field Station was conducted. | mammalogy |
| 2001 | Rice Creek Field Station Ornithology Collection: Year 1 | George Maxwell, Garr Owens (S) | | SUNY Oswego | Review, inventory and assessment of the bird specimens at Rice Creek Field Station was conducted. | collections |
| 2001 | Rice Creek Field Station Butterfly Population Study: Year 6 | Peter Weber, Michael Holy | | SUNY Oswego | The Rice Creek Butterfly Project is what the lepidopterist H.K. Clench referred to as a "local study": that is, an intensive long term investigation of a small area. The main aim of the project continues to be characterize the Rice Creek Field Station's butterfly community over seasons, within habitats and between seasons. | entomology |
| 2000 | Monitoring Seasonal Moisture Budget and the Impacts of Variations in Subsurface geophysical PropertiesContinuation | David Valentino, Al Stamm, Jeff Chiarenzelli | | SUNY Oswego, SUNY Oswego, SUNY ESF | An experiment was conducted to document the physical relationships between precipitation, surface water infiltration and the electrical (geophysical) properties of the shallow subsurface at Rice Creek Field Station. | geology |
| 2000 | Small Mammal Survey at Rice Creek Field Station: Year 5 | Diane Chepko-Sade | | SUNY Oswego | A systematic survey of small mammals at Rice Creek Field Station was conducted. | mammalogy |
| 2000 | Rice Creek Field Station Butterfly Population Study: Year 5 | Peter Weber, Michael Holy | | SUNY Oswego | The Rice Creek Butterfly Project is what the lepidopterist H.K. Clench referred to as a "local study": that is, an intensive long term investigation of a small area. The main aim of the project continues to be characterize the Rice Creek Field Station's butterfly community over seasons, within habitats and between seasons. | entomology |

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|------|---|----------|--|-------------|---|-------------|
| 1999 | Establishing a Meteorological Station at Rice Creek Field Station | Al Stamm | | SUNY Oswego | Installed equipment needed to start a climatology of the Rice Creek area including wind, temperature, humidity, pressure, precipitation and ground and water temperature. | meteorology |
|------|---|----------|--|-------------|---|-------------|

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|------|--|------------------------------------|--|---------------------------------|--|------------|
| 1999 | Monitoring Seasonal Moisture Budget and the Impacts of Variations in Subsurface geophysical PropertiesContinuation | David Valentino, Jeff Chiarenzelli | | SUNY Oswego, SUNY ESF | An experiment was conducted to document the physical relationships between precipitation, surface water infiltration and the electrical (geophysical) properties of the shallow subsurface at Rice Creek Field Station. | geology |
| 1999 | Small Mammal Survey at Rice Creek Field Station: Year 4 | Diane Chepko-Sade | | SUNY Oswego | A systematic survey of small mammals at Rice Creek Field Station was conducted. | mammalogy |
| 1999 | Butterfly Populations at Rice Creek Field Station, 1999 Season (Year 3) | Peter Weber, Michael Holy | | SUNY Oswego | The Rice Creek Butterfly Project is what the lepidopterist H.K. Clench referred to as a "local study": that is, an intensive long term investigation of a small area. The main aim of the project continues to be characterize the Rice Creek Field Station's butterfly community over seasons, within habitats and between seasons. | entomology |
| 1998 | Seasonal Variability of Relative Resistivity Measurements: Geophysical Characteristics of the Shallow Subsurface at the Rice Creek Field Station | David Valentino, Samuel Peavy | | SUNY Oswego, Rutgers University | Surveying up to six sites to determine a site for a longer term project to establish a base line of resistivity variability related to seasonal precipitation. | geology |
| 1998 | Variability of Electrical Resistivity at Rice Creek Field Station, Oswego, New York: Implications for the Distribution of Groundwater | David Valentino, Samuel Peavy | | SUNY Oswego, Rutgers University | Electrical resistivity measurements were made to determine the variability of surficial deposits, the depth to bedrock and to characterize the distribution of groundwater at rice creek field station near Oswego, NY. | geology |
| 1998 | Small Mammal Survey at Rice Creek Field Station: Year 3 | Diane Chepko-Sade | | SUNY Oswego | A systematic survey of small mammals at Rice Creek Field Station was conducted. | mammalogy |

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|------|---|--------------------|--|-------------------|--|-------------|
| 1997 | Small Mammal Survey at Rice Creek Field Station: Year 2 | Diane Chepko-Sade | | SUNY Oswego | A systematic survey of small mammals at Rice Creek Field Station was conducted.. | mammalogy |
| 1997 | Survey of the Amphibian and Earthworm Species of the Rice Creek Field Station | Jennifer Frank (S) | | SUNY Albany | Populations study on amphibian predation on earthworms at Rice Creek Field Station in comparison with findings from Huyck Preserve in eastern New York State was conducted.. | amphibians |
| 1997 | A Study of Bird Nesting on Rice Pond and Adjoining Habitats | John Weeks | | Retired Biologist | Surveys of birds nesting along the shoreline of Rice Pond were conducted to create a baseline informations and a method of study regarding active nesting of birds. | ornithology |

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|------|--|-----------------------------|--|-------------|---|------------|
| 1997 | Butterfly Populations at Rice Creek Field Station: The 1997 Season | Peter Weber, Nicholas Weber | | SUNY Oswego | The Rice Creek Butterfly Project is what the lepidopterist H.K. Clench referred to as a "local study": that is, an intensive long term investigation of a small area. The main aim of the project continues to be characterize the Rice Creek Field Station's butterfly community over seasons, within habitats and between seasons. | entomology |
| 1996 | A Survey of Small Mammal Populations at Rice Creek Field Station | Diane Chepko-Sade | | SUNY Oswego | The purpose was to census the populations of small mammals present in four representative habitats at the field station to compare characteristics such as species composition, populations densities and adult weights and measurements with those of small mammal populations in other environments that may be similar or different both geographically and ecologically. A second purpose has been to provide undergraduate students with an opportunity to participate in scientific research. | mammalogy |
| 1996 | Butterfly Populations at Rice Creek Field Station: A Progress Report | Nicholas Weber, Peter Weber | | SUNY Oswego | Since the arrival of European colonists, North American butterflies have been in a steady decline. Our short term purpose was to create a checklist of RCFS butterflies which could be made available to naturalists and teachers to promote interest in butterfly preservation. In long term we intend to create an annotated monograph characterizing the butterflies of the RCFS grounds, similar to that which exists for Oswego County birds. | entomology |