Rice Creek Field Station QUEST Presentations

Year	Presenter(s)	Title	Sponsor	Abstract
4/4/2018	Peter Balzani	Geophysical explorations and drilling of water monitoring wells at Rice Creek Field Station	Justin Stroup	In recent decades, groundwater resources have become strained across the globe. As a result, the need to characterize groundwater resources has become increasingly important. Through the process of conducting geophysical explorations, drilling monitoring wells based on geophysical data, and combining geophysical and well data, groundwater systems can be characterized. In this study at Rice Creek Field Station in Oswego, NY, the geophysical technique of electrical resistivity tomography (ERT) was used to image the saturation state of the subsurface. From September 10th to October 30th [2017], seven ERT survey lines were conducted, ranging in length from 24 m to 360 m and in depth from 4 m to 100 m. Highly saturated regions were selected as sites to drill groundwater monitoring wells. Here, we present ERT data and initial descriptions of two water monitoring wells that were drilled at Rice Creek Field Station on November 20th [2017] by Parratt-Wolff Inc. Groundwater flow was characterized by estimating hydraulic conductivity (K), which is a measure of how quickly water moves through the ground. Values for hydraulic conductivity vary greatly depending on subsurface geology. The subsurface geology of Rice Creek consists of highly variable glacial deposits, and accordingly significant variation in hydraulic conductivity was observed between the two wells. Well RCHMA-A had higher K value than well RCHMA-B. The process of integrating geophysical data and well data, as demonstrated at Rice Creek, represents a model to characterize groundwater resources that can be applied in many different scenarios to help mitigate issues of strained ground water resources.
4/4/2018	Jessica Bullock	Understanding the hydrologic cycle at Rice Creek Field Station and Fallbrook Farm	Justin Stroup	The hydrologic cycle is composed of three main interconnected systems: atmospheric water, groundwater, and surface water. Understanding the connectivity of these systems within the hydrologic cycle helps to further our understanding of how water is distributed and moves on the landscape. Precipitation recharges ground water and both precipitation and ground water feeds streams. Here, we explore the relationships among weather conditions (e.g. precipitation and temperature), surface water (stream flow) and groundwater (changes in water table heights) to understand the hydrologic cycle. In particular, we focus on how these parameters change from winter to spring. We are working at the Rice Creek Field Station to monitor Rice Creek stream discharge, precipitation and temperature and at Fall Brook Farm to measure water table heights which indicate groundwater recharge. We examine the lead lag relationships that exist between groundwater and river flow as a result of rain and snow melt events. During one such event from February 4th to the 10th [2018], there was a period of prolonged rain. From February 1st to the 7th stream stage had decreased about 0.3 feet but then from February 8th to the 15th rose by 0.3 feet. The ground water monitoring well at Fall Brook Farm also experienced changes in water table height decreasing from February 1st to the 11th and then increasing from February 12th to the 15th . Despite both the stream and ground water system experiencing the same weather conditions the river stage responded to the event four days faster than the ground water. This observation illustrates the lag time between surface water runoff, recharging the river and infiltration, recharging groundwater. As our monitoring efforts continue, we will be able to characterize the variations in leads and lags of ground water and surface water recharge under a variation of different weather conditions. Over time our efforts will provide specifics of the hydrologic cycle at Rice Creek and help to inform our understanding about how surface and groundwater moves through landscapes dominated by glacially deposited sediments.
4/4/2018	Manna Job	Effects of Atrazine on Freshwater Mussels	Poongodi Geetha-Loganathan	Drosophila suzukii is an invasive agricultural pest that arrived in New York in 2011. Using a serrated ovipositor, the female is able to deposit her eggs in fresh fruit rather than rotten fruit as other Drosophila species do. As the larvae hatch, grow, and develop, the fruit is spoiled and is no longer

				marketable. This research investigated the microbes associated with D. suzukii and hypothesized that unique aspects of the microbiome allow for the proper growth and development of their larvae. To determine the presence of D. suzukii in Oswego County, traps were set at Rice Creek Field Station and Fruit Valley Orchard. These results indicated that the insect is present in Oswego County, and the best time to trap D. suzukii was mid to late July. Each D. suzukii individual was homogenized in sterile saline solution and a selective plating procedure was used to isolate bacterial and yeast microbes from their gut. Bacterial density per fly was slightly greater than yeast density per fly. To identify microorganisms isolated from flies, genomic DNA was isolated, marker genes amplified by PCR, and sequenced by Sanger sequencing. Our results suggest that the most prevalent bacteria found in D. suzukii were members of the Enterobacteriacea and other gammaproteobacteria, contrary to some prior studies. The most prevalent yeast genera found in D. suzukii were Candida and Hanseniaspora. The impact of each species of microbe on the growth and development of D. melanogaster fruit fly larvae was investigated via gnotobiotic fly experiments. We also examined oviposition preference in D. melanogaster, to see if certain microbes attract egg-laying females. Our results suggest some, but not all, microbes we isolated are beneficial to Drosophila.
4/4/2018	Nathan McKean	Comparing Immune response to Ranavirus infection prevalence in Lithobates clamitans (green frog) populations in Oswego County	Jennifer Olori, Sofia Windstam	Although many factors are contributing to world-wide amphibian decline, one of great concern is the pathogen responsible for ranaviriosis. Previous trends observed within a long-term study assessing the overall presence of this disease in Oswego County indicate that there is a sex-based bias towards higher infection prevalence in female Lithobates clamitans. Breeding behavior in L. clamitans is hypothesized to be associated with a decrease in innate immune health, which could be related to increased ranavirus prevalence. During the 2017 breeding season (May- August), 210 frogs were sampled from two locations in Oswego County and assessed for disease presence using Polymerase Chain Reaction and Gel electrophoresis. Of these 210 samples, enough blood was obtained from 94 individuals (41 female, 53 male) to perform Enzyme-Linked Immunosorbent Assays (ELISA) and hemolysis-agglutination titer assays in parallel. ELISA is used to measure the concentration of corticosterone in the blood, which approximates stress levels experienced by the frogs. Hemolysis-agglutination titer assays quantify relative immune health of the frogs. Preliminary data show there is no difference in corticosterone levels between males and females, suggesting that another explanation is needed for the sex-based-bias observed.
4/4/2018	Corinne Monaco	Influence of aquatic environment on Batrachochytrium dendrobatidis and Ranavirus infection prevalence in amphibians	Jennifer Olori, Sofia Windstam	Amphibian populations are in decline due to emerging infectious diseases such as chytridiomycosis, caused by the fungus Batrachochytrium dendrobatidis, and ranaviriosus, caused by viruses from the family Iridoviridae. These diseases are found almost everywhere amphibians are found, and may cause mass die-offs. Because these pathogens persist in the water, any changes in the water environment, such as pH, salinity, or temperature, can affect an amphibian's chance of being infected. Approximately 30 water samples were taken from each of three sites in Oswego County. Each sample has frog disease data associated with it. Preliminary data from 2015-2016 indicate that Rv infections are more prevalent in higher water temperatures, and Bd infections are more prevalent in lower temperatures. With climate change becoming a rising concern, it is possible that warmer temperatures will impact the interactions between amphibians and these pathogens.
4/4/2018	Imran Razik	Effects of seasonality on the foraging patterns of the North American beaver, Castor Canadensis	Maria Sagot	The effects of environmental factors such as resource dispersion and abundance on animal behavior have long been studied in the field of animal ecology. Often, these effects manifest themselves as changes in home range size, foraging patterns, and territoriality, as seen in many terrestrial and aquatic animal species. However, relatively little is known about how semiaquatic animals respond to different environmental changes such as seasonality. Consequently, I aim to examine how the

				presence and activity of the North American Beaver will vary in response to seasonal variation, and how this might ultimately impact the biodiversity and ecology of freshwater systems.
4/4/2018	Gabrielle Solomon	Microbiota of the Invasive Crop Pest, Spotted Wing Drosophila	Peter Newell	Drosophila suzukii is an invasive agricultural pest that arrived in New York in 2011. Using a serrated ovipositor, the female is able to deposit her eggs in fresh fruit rather than rotten fruit as other Drosophila species do. As the larvae hatch, grow, and develop, the fruit is spoiled and is no longer marketable. This research investigated the microbes associated with D. suzukii and hypothesized that unique aspects of the microbiome allow for the proper growth and development of their larvae. To determine the presence of D. suzukii in Oswego County, traps were set at Rice Creek Field Station and Fruit Valley Orchard. These results indicated that the insect is present in Oswego County, and the best time to trap D. suzukii was mid to late July. Each D. suzukii individual was homogenized in sterile saline solution and a selective plating procedure was used to isolate bacterial and yeast microbes from their gut. Bacterial density per fly was slightly greater than yeast density per fly. To identify microorganisms isolated from flies, genomic DNA was isolated, marker genes amplified by PCR, and sequenced by Sanger sequencing. Our results suggest that the most prevalent bacteria found in D. suzukii were members of the Enterobacteriacea and other gammaproteobacteria, contrary to some prior studies. The most prevalent yeast genera found in D. suzukii were Candida and Hanseniaspora. The impact of each species of microbe on the growth and development of D. melanogaster fruit fly larvae was investigated via gnotobiotic fly experiments. We also examined oviposition preference in D. melanogaster, to see if certain microbes attract egg-laying females. Our results suggest some, but not all, microbes we isolated are beneficial to Drosophila.
4/5/2017	Zachary Bennett, Kimberly Bracken, Abigail Ellert	Effects of Phenolic Compound Concentrations and UV Reflectance on the Winter Foraging Behaviors of Mammals and Birds on Staghorn Sumac	Michael Schummer, Vadoud Niri	no abstract available
4/5/2017	Kaitlyn Clapp	Assessing the Biochemical Effects of PCB 105 Exposure on *Elliptio complanata* (eastern elliptio)	James MacKenzie	no abstract available
4/5/2017	Jessica Gibbons	The Ultrastructure and Composition of Painted Turtle Egg Shell and Shell Membrane	Poongodi Geetha-Loganathan	no abstract available
4/5/2017	Jason Lowery	Using Amphibian Disease Ecology for Training Current and Future STEM Researchers	Jennifer Olori and Sofia Windstam	no abstract available
4/5/2017	Jaclyn Lovell	Comparative Histopathology of Trematodes (Digenea) Infecting Snails (Pleuroceridae) from Rice Creek	Andrew McElwain	no abstract available
4/5/2017	Christopher Rigobello	Winter Habitat Partitioning of Woodpeckers in Oswego, New York	Michael Schummer	no abstract available
4/13/2016	Elizabeth Abbott, AST 350 Students	Polar Alignment of the Rice Creek 16" Telescope	John Rusho, Shashi Kanbur	no abstract available

4/13/2016	AST 350 Students	Installation and Characterization of the SBIG ST 402 CCD Camera on the RCO Telescope	John Zielinski, Scott Roby, John Rusho, Shashi Kanbur	no abstract available
4/13/2016	AST 350 Students	Installation and Characterization of the LHIRESS III Spectrograph on the RCO Telescope	John Zielinski, Scott Roby, John Rusho, Shashi Kanbur	no abstract available
4/13/2016	AST 350 Students	Installation and Characterization of the MallinCam Xtremen X2 Video CCD Camera on the RCO Telescope	John Zielinski, Scott Roby, John Rusho, Shashi Kanbur	no abstract available
4/13/2016	Heather Eldridge	Individual & species level behavioral responses to the presence of predators: Comparisons between the White-footed mouse & the Northern short-tailed shrew.	Maria Sagot	no abstract available
4/13/2016	Rebecca Gill	Evidence of P eriodontal Disease in Skulls of Carnivorans and Rodents Poster	Jennifer Olori	no abstract available
4/13/2016	Wyutyi Kyaw	Life cycle and pathogenicity of Proterometra sp. (Digenean, Azygiidae) in Rice Creek, New York Poster	Andrew McElwain	no abstract available
4/13/2016	Jaclyn Lovell	Comparative Histopathology of Trematode (Digenea) Infections in the Gonad of Freshwater Snails (Gastropoda, Pleuroceridae) from Rice Creek, New York	Andrew McElwain	no abstract available
4/13/2016	Stacy I. Palacios	Early Embryonic Vascular Development in Turtles Poster	Poongodi Geetha-Loganathan	no abstract available
4/13/2016	Brian Springall	Anuran Antipredator Behavior and Vehicle Noise: The Distracted Prey and Increased Threat Hypothesis	Michael Schummer, Karen Sime	no abstract available

4/13/2016	Karolina Trojanowski, Jessica Gibbons	Three-Dimensional Analysis of Turtle Morphogenesis Poster	Poongodi Geetha-Loganathan	no abstract available

4/13/2016	Sofia Windstam	Role of environmental conditions, host and habitat characteristics on ranaviral prevalence in amphibians		no abstract available
4/15/2015	Diana Sweatt	Rice Creek Mammal Field Guide Poster	Margot Sagot	no abstract available
4/15/2015	Calee Wilson	Local Museum Specimen Screening for the Arrival of Batrachochytrium dendrobatidis in Central New York	Sofia Windstam	no abstract available
4/15/2015	Sofia Windstam	Spatio-temporal Distribution of the Amphibian killing Fungus Batrachochytrium dendrobatidis in Oswego County, New York		no abstract available
4/9/2014	Rachel Cary	Screening Amphibian Populations in Oswego County, NY for Infectious Ranavirus	Jennifer Olori, Sofia Windstam	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.
4/9/2014	Jessica Kretschmann	Collections and Nests: A Photographic Archive	Julieve Jubin	Display of photographs of bird nests found in the collection of the Rice Creek Field Station. The goal of the project is to both create an awareness of the Rice Creek collection as well as develop a photographic archive of Rice Creek specimens for educational purposes.

4/9/2014	Kurt Masiello, Nathaniel Wells	Evaluation of Foraging Patterns by Whitetailed Deer (Odocoileus virginianus) During Winter at Rice Creek Field Station	Andrew McElwain, Michael Schummer	Selective foraging among White-tailed deer (Odocoileus virginianus) can shift plant communities considerably, potentially causing less palatable plants to become more abundant, and vice versa. We followed deer tracks, recorded stem damage to determine the frequency of use and availability of plants among four different habitat types. Our aim was to determine if deer selectively (non-random) forage on woody stems of certain species at Rice Creek Field Station, Oswego, NY in January 2014, while additionally documenting any non-random stopping patterns among habitats. Our results suggest deer selectively browse ($\chi 2=31.81$, n=11, $p<0.01$) and browsing differs among habitats ($F3,36=27.78$, n=4, $p<0.01$).
4/9/2014	Octavia Morrison, Irene Franco	European Gypsy Moth (Lymantria dispar) Egg Cluster Abundance and Orientation on Trees at Rice Creek Field Station	Michael Schummer, Andrew McElwain	Gypsy moths (Lymantria dispar) are a non-native species that contribute to the defoliation of native trees. Putative gypsy moth egg masses were observed over a one week period as part of the winter ecology course at Rice Creek Field Station in Oswego, NY. Data collection of egg masses was taken to determine whether oviposition by these moths was influenced bark coloration, bark texture, height, or aspect. Our results suggest that gypsy moths show oviposition selection for trees with dark colored and rough textured bark. Orientation of oviposited egg masses proved to be a more important environmental factor influencing oviposition than aboveground height.

4/9/2014	Amber Snyder	Do Biofilm Communities Vary between Vernal Pools at Rice Creek Field Station?	Cynthia Tant	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.
4/17/2013	Daniel Frick	Seasonal Movements and Habitat Use by Snapping Turtles (Chelydra serpentina) and Midland Painted Turtles (Chrysemys picta marginata) at Rice Creek Field Station, Oswego, New York	Peter Rosenbaum	The purpose of this research was to observe and analyze the seasonal movements and habitat use of the Common Snapping Turtle (Chelydra serpentina) and the Midland Painted Turtle (Chrysemys picta marginata) 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.
4/17/2013	Diniece Howell	Rice Creek – Recordings of an Educational History of a Field Station and its Advancement for the Future	Cleane Medeiros	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.

4/17/2013	Jennifer Olori, Sofia Windstam	Prevalence of Batrachochytrium dendrobatidis, agent of amphibian fungal disease chytridiomycosis, at Rice Creek Field Station		Although the fungus Batrachochytrium dendrobatidis (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 longterm 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.
4/17/2013	Kasandra Whitney, Zuzi Salais	The Spatial Distribution of Lyme Disease Carrying Ticks at Rice Creek Field Station	Tim Braun	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, Ixodes scapularis, within Rice Creek field station. The frequency of ticks infected with the bacterium that causes Lyme disease, Borrelia burgdorferi, 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 Borrelia. This geographical information can be used to gauge human health risk in different areas of Rice Creek field station.
4/18/2012	Alexandria McRae	Risk of Predation by Coyotes Influences Land Usage by Deer	John Laundre	The concept of the Landscape of Fear suggests that prey species such as the white-tailed deer occupy areas where their risk of predation is lower. This concept also states that predator species, such as coyotes, use areas where their hunting success is higher. My senior research project, conducted during the winter of 2011-2012, studies the relationship between deer and coyote in Upstate New York based on this idea. The talk will present the concept and my findings.

4/18/2012	Ryan Navarro	Assessing the Landscape of Fear: A Study of the Habitat Use of the Black Capped Chickadee	Lucina Hernandez	The Landscape of Fear Theory states that animals perceive their environment in terms of safe or risky areas. This theory predicts that animals will spend more time foraging in safe areas as opposed to areas they associate with risk. Black-capped chickadees (Parus atricapillus) inhabit forest areas, commonly being found at the forest edge. Its main predators are diurnal and nocturnal raptors, which have elevated hunting attack success rates in open habitat. My research was conducted at Rice Creek Field Station and evaluates the foraging behavior of P. atricapillus with respect to the risk of predation.

4/13/2011	Kathryn Beaumont	Does leaf litter quality differ between dominant plants in a Rice Creek Field Station Marsh?	Eric Hellquist	Dead plant remains (litter) can affect marsh plant community interactions. We collected leaf and litter samples from plots in a Rice Creek Field Station marsh from May to October 2010. The marsh was dominated by Lythrum and Typha communities. We established 16 plots in each zone as part of a litter transplant experiment. Within each zone, 4 plots were controls, 4 had Typha litter added, 4 had Lythrum litter added, and 4 had litter removed. To understand the nutrient content of the dominant plant biomass in our plots we analyzed carbon to nitrogen (C:N) ratios. Based on the different growth habits of Typha and Lythrum we predicted that Typha would have higher quality litter with greater nitrogen concentrations. Any differences in litter C:N ratios can have consequences for plant-soil feedbacks that determine community structure and nutrient cycling in marshes.
4/13/2011	Christina Gagliardi	A Census of Rice Creek Field Station Birds: An Analysis of species abundance and migratory patterns	Eric Hellquist	Birds migrate for various reasons that include warmer weather, longer hours of daylight, safe places to breed, and a higher availability of food, water, and other resources. We conducted a field survey of birds at Rice Creek Field Station (RCFS) in four habitats (pond, meadow, wetlands, and forest) during September and October 2010. We censuses birds using ten minute point counts in three different locations within each habitat (n=3 for each habitat). We found that the most abundant species were the red-winged blackbird (26.01%) and the Canada goose (13.60%). We also found that four species of migratory birds (red-winged blackbird, American robin, Canada goose, and mallard) showed no significant evidence of migration ($p > 0.05$). In addition to our data, we also used bird surveys from earlier RCFS records to understand how the abundances of several prominent species (red-winged blackbird, Canada goose, black-capped chickadee, American crow, American goldfinch, blue jay, and mallard) have changed over time (1978, 1995, and 2010).
4/13/2011	Christina Gagliardi	Activity Patterns of Raccoon (Procyon loter) in Rice Creek Field Station	Lucina Hernandez	There are many factors that can affect a species activity pattern. Some of these factors are: abiotic natural factors, human disturbance, predator avoidance, and competition within a species and with other species. The objective of this study was to analyze raccoon (Procyon lotor) activity patterns and to evaluate if their behaviors, foraging and vigilance, are related with the type of habitat that they are occupying. Ten camera traps were set up at Rice Creek Field Station, five in the open fields and five in the forest. There were a total of 509 pictures with raccoons in them and they were taken from September 2009 to April 2010. I analyzed the pictures from the ten cameras. I found that raccoons are more active between 22:00 h and 2:00 h, but these were not statistically significantly different than the other hours the raccoons were active, which were from 18:00 h to 21:00 h and 3:00 h to 7:00 h($P= 0.386$). Also a two-way ANOVA test was done to compare the habitats and behaviors. Both the habitat ($P= 0.089$) and the behavior ($P=0.369$) did not show any statistical significance. I proposed to use additional field techniques such as radio telemetry to have a more accurate estimation of the activity patterns of this species.

4/13/2011	Georgia Keene	Ecological studies of food plant use in Papilio polyxenes	Karen Sime	The Eastern black swallowtail (Papilio polyxenes) is rare in Upstate New York despite the abundance of its most commonly reported host plant, wild carrot (Daucus carota). The results of a preliminary experiment conducted by Dr. Karen Sime suggest that another plant, fool's parsnip (Aethusa cynapium), may be a better host plant, despite its containing toxic compounds. I sought evidence for a genetic basis of some caterpillars' ability to survive and thrive on this plant by trying to raise two or more generations to compare caterpillar survivorship. I also sought to raise caterpillars for study in the field on water parsnip (Sium suave), a native plant found in semi-aquatic areas at Rice Creek. The data I collected in the lab support the hypothesis that fool's parsnip is nutritionally superior to wild carrot despite its toxicity.
4/13/2011	Cayla Reynolds	Foraging Preferences of the Pileated Woodpecker (Dryocopus pileatus) at Rice Creek Field Station, Oswego NY	Eric Hellquist	We conducted research at Rice Creek Field Station between September 22nd to October 17th, 2010 on the forest type use and tree preferences of the pileated woodpecker (Dryocopus pileatus) based on foraging habits. We measured the overall health of the tree, the size of the tree, and the woodpecker damage to the tree. We found that the pileated woodpeckers preferred a different tree species based upon which forest type they were foraging from ($p < 0.05$). They also selected larger trees that had a diameter at breast height greater than 20 cm ($p = 0.01$) and trees that were of higher decay ($p < 0.05$). Our results show that pileated woodpeckers do forage selectively depending on forest type and tree condition.
4/13/2011	Matthew Spiker	An examination of the presence of the Ermerald Ash Borer (Agrilus planipennis) in Rice Creek Field Station	Karen Sime	The emerald ash borer is an insect pest that has been very detrimental to the environment in recent years. First discovered and documented in the United States in 2002, it has spread throughout many states in the northeast and up into Canada. Emerald ash borer infestations lead to many deaths of ash trees every year. In light of the importance of this particular pest’s damage to the environment, I surveyed the area of Rice Creek Field Station for the presence of the emerald ash borer. After surveying 30 ash trees, no evidence of its presence in the area was found. It seems that the most probable explanation for my results would be that the emerald ash borer needs time to reach the area and propagate throughout it.

4/13/2011	Lisa Thibault	Spatial separation of white-tailed deer (Odocoileus virginianus) and coyotes (Sanis latrans) in Rice Creek Field Station	Lucina Hernandez	Predation is an important force in the nature that helps to explain evolutionary and ecological processes. There are two approaches to study predation; one focuses in the lethal effect of the predator, the other considers the non-lethal effects of predators over their prey. My study took the second approach. I conducted this research at Rice Creek Field Station, where the top predator is the coyote (Canis latrans), and is known that in the Northeastern temperate forest their main prey is white-tailed deer (Odocoileus virginianus), thus my predator-prey system is coyote-white tailed deer. Because coyote is a cursorial predator, they are successful hunters in open areas. My predictions are: (1) Major patches of habitat used by prey will be those where they have less probabilities to be predated, it means that in Rice Creek deer will use more forest areas (2) predator will use more frequently habitats where they will have a higher probability to kill their prey, it means that in Rice Creek coyotes will use more open areas. To test these predictions, I studied the habitat use of the two species during January and February of 2010 by following tracks with a GPS. My results are 18.53% of deer tracks, and 10.07% of coyote tracks were found in open forest.

4/13/2011	Bradley Wells	The effects of plant litter (Typha glauca and Lythium salicaria) on species composition in a Rice Creek Field Station Marsh	Eric Hellquist	Typha glauca and Lythrum salicaria are invasive species that can alter community dynamics. Production of dead biomass by invasive plant species is related to changes in species composition. We conducted a reciprocal litter transplant experiment with Typha and Lythrum biomass. We established plots across four treatments in a Lythrum and a Typha community. Species richness, biomass, stem count, and water depth were measured throughout the summer. The two communities showed no difference in species richness (t-test; $p=0.10$). In the Typha community (ANOVA; $p>0.05$) and the Lythrum community (ANOVA; $p>0.05$), biomass measurements did not differ between litter addition and cleared plots. Lythrum stem density in the Lythrum community was greater than Typha stem density in the Typha community (ANOVA; $p<0.0001$). There were no differences between treatment manipulations, but changes in plant dominance related to litter treatments may become apparent as our experiment continues.
4/22/2010	Kara Benson, Gabriela Castro, Jennifer Duprey, Toby Klein, John Mietz, Jonmark Nailor, Sandra Paiko, Kristina Wilkinson	Measuring Giving up Densities (GUDs) of Deer in the Rice Creek Field Station	Lucina Hernandez	It has been shown that the level of predation risk deer experience changes over the landscape relative to the habitat types found. One way of measuring this predation risk is by determining the giving up density (GUD) of depletable food sources offered in feeding boxes. As predation risk increases, animals leave more food behind in the boxes. We used this technique to assess the level of predation risk from coyotes (Canis latrans) white-tailed deer (Odocoileus virginianus) perceive in open verses closed habitat types at the Rice Creek Field Station. The results of this field work will be presented.
4/22/2010	Danielle Bonner, Jamilee Jones, Lucas Jones, Cayla Reynolds, Jennifer Schopfel, Matthew Spiker, Tod Tepfenhard, Katie Wildrick	Activity Patterns of White-Tailed Deer at Rice Creek	Lucina Hernandez	Daily activity cycles of animals can be influenced by environmental conditions as well as predation risk. Here we assessed the daily activity patterns of white-tailed deer (Odocoileus virginianus) at the Rice Creek Field Station with the use of camera traps. We used the number of photos of deer taken per hour at artificial feed stations as an index of activity levels. We compared activity levels for the different times of the 24 hour cycle as well as compared activity patterns between cameras positioned in open verses closed forest areas. The results of our analyses will be presented.

4/22/2010	Mark Graham, David Zupuk	The Potential Ecological Impacts of Rosa Multiflora on Soil Nutrient Cycling at Rice Creek Field Station	Eric Hellquist	Invasive woody shrubs originating from East Asia have greatly affected the North American forests into which they have been introduced. We conducted a study examining the effects of the invasive shrub Rosa multiflora on its surrounding ecosystem in comparison to native species at Rice Creek Field Station. Leaf clippings from R. multiflora had lower mean C:N ratios (C:N=20.30) in comparison to native species (C:N = 25.06) (ANOVA, $p < 0.05$). The leaf litter in areas of high R. multiflora invasion also had significantly lower mean C:N ratios (C:N = 25.30) than litter from native species (C:N = 31.26) (ANOVA, $p < 0.05$). We found that as stem density of R. multiflora increased there was a lower C:N ratio ($p = 0.0002$, $r2 = 0.46$). R. multiflora may be able to alter nutrient cycling by increasing litter quality, which will ultimately modify leaf litter decomposition.
4/22/2010	Andréa Griffin-Bordis, Julia DeRosso, Andrew Crawford, Ross Glassberg, Sarah Haggerty, Megan Hoffman, Jessica Konop, Nicholas O'Hare	A Camera Trap Survey of Medium and Large Mammals in the Rice Creek Field Station	Lucina Hernandez	Documenting the occurrence and distribution of medium to large mammals can be difficult because of the secretive nature. One new method to do so is with the use of camera trap surveys. We used this method in the Rice Creek Field Station to help us develop a photographic record of the medium to large mammals that are found in the area. From September 2009 to March 2010, we set 10 trail cameras in different habitats found in Rice Creek. Results include photographs of 8 species of mammals, including one species, the fisher (Martes pennanti), which had not been previously reported for the area.

4/22/2010	Anthony Hartman	Foraging Ecology of Coyotes in New York State	Lucina Hernandez	With the persecution and removal of wolves and mountain lions from New York State, the coyote has been free to establish itself as a top predator. There is still much to be learned about the foraging ecology of these animals and what impact they have, if any, on the deer population. We selected two study sites â?? one with high deer density and one with low deer densityâ?? and compared the diet selection of coyotes in these areas by way of scat analysis (N=60). Prey items were identified by microscopic examination of hair scales and analysis of bones and teeth.
4/22/2010	Michele Hierholzer	Concentration of Cu, Zn and Ni in Sediment, Rood and Leaf Samples of Typha x glauca: a Comparison Between Rice Creek Field Station and the Oswego River	Eric Hellquist	no abstract available
4/22/2010	Diann Jackson	Winter Bird Populations at Rice Creek Field Station		An annual survey of birds visiting feeders during the winter was conducted at Rice Creek Field Station as part of a larger study sponsored by Cornell University. Our data contributed to the tracking of winter bird populations and monitoring of long term trends in bird distribution and abundance in North America. SUNY Oswego students and community members were able to participate and learn more about birds wintering in the area.

4/22/2010	Andrew Nelson	Illustrating the Flora of Rice Creek Field Station		A Digital Illustrated Flora of Rice Creek Field Station was added to the Field Station web site in January, 2010. It contains photographs of plants taken at Rice Creek over the preceding ten years, and covers all species of plants recorded from the Field Station properties as of the autumn of 2009. Included are a total of 725 species, 601 of which have been found growing in the wild without cultivation. The presentation will demonstrate the structure and use of the Digital Flora and discuss the contribution of studies of local flora to the basic knowledge required for environmental management.
4/22/2010	Sandra Paiko	Does Mast Availability Affect Reproductive Output in Eastern Chipmunks?	Emily Oaks	The eastern chipmunk (Tamias striatus) is a small, ground dwelling rodent that can be found all around New York State. Female chipmunks, like all mammals, must reach a certain weight before they are able to reproduce. It is hypothesized here that chipmunks that are able to collect more mast for winter sustenance will be able to breed twice during the year, once in the early spring after torpor and again in the late summer, instead of just once. This hypothesis was tested by comparing three areas of different mast levels (low, moderate, and high mast). A fine-scale analysis was also performed on a single grid with high mast availability by comparing the trap sites at which females were trapped and the location of mast-producing trees on the grid. There was no correlation between mast availability and proportion of females reproducing in spring in the large scale analysis but in the small scale analysis there was a significant difference between the distance breeding females must travel to find mast and the distance non-breeding females must travel to find mast. More info: study was done at Rice Creek; mast amounts measured were hickory and beech. (primarily old--growth forest for the fine-scale analysis).

4/22/2010	Linda Snider	Stone Walls as Refugia for Trees in a PostAgricultural Secondary Forest in Upstate New York	Eric Hellquist	Agriculture can transform a forested landscape into one of cleared fields and regenerating forests. I investigated the possible role of stone walls as refugia for tree seedlings in a post-agricultural secondary forest. I examined tree abundance along stacked and thrown stone walls at Rice Creek Field Station (RCFS). Basal area of trees growing within 2 m of thrown walls were larger than those growing 12 -14 m from the walls ($p < 0.0001$). Along stacked walls, there was no difference in the basal area of trees as related to distance from the walls ($p = 0.70$). Thrown walls have provided a microhabitat that promoted the establishment of trees that germinated during agricultural clearing of forests. These seedlings were spared from clearing due to their germination on or near stone walls and now represent some of the largest trees in RCFS forests.

4/22/2010	Melissa Stimpfle	The Effect of Native Parasitoids on Sirex Noctolio at Rice Creek Field Station, Oswego, NY	Karen Sime	The purpose of this study was to investigate the ecology of Sirex noctilio (Hymenoptera: Siricidae), an invasive woodwasp, in Oswego County, New York. The potential effects of parasitoids, competition with other siricids, and habitat type were investigated. Malaise traps and Lindgren funnel traps were set in three locations near the SUNY Oswego campus during late summer and early autumn 2008 and 2009 in order to assess populations of S. noctilio, associated parasitoids, and other siricid wasps. Damage rates on trees from each location were also recorded. Few parasitoids and siricids were caught in the traps. Thus there was no evidence of competition with native siricids or impact of native parasitoids. No S. noctilio were caught; however, Pinus sylvestris at one location in Rice Creek showed evidence of damage due to S. noctilio. This finding suggests that S. noctilio has either left the area or is present at very low numbers. Sirex noctilio seems to require a specific composition of tree species. No Pinus resinosa sampled showed signs of a S. noctilio infestation and P. sylvestris did show signs of infection only when these trees were the sole species in the area. There were no signs of S. noctilio infestation on P. sylvestris that grew in mixed stands with deciduous trees. Environmental factors, possibly differences in climate and habitat structure, seemed to have an effect on S. noctilio populations in Oswego which may help prevent serious outbreaks of S. noctilio populations in North America.
4/22/2010	Edward Wells	A Comparison of Plant Biomass and Species Richness in Purple Loosestrife and Hybrid Cattail Communities at Rice Creek Field Station	Eric Hellquist	no abstract available
4/22/2010	Kristi Wilkinson	Interactions Among Lythrum Salicaria, Native Birds and Biological Control Beetles at Rice Creek Field Station	Eric Hellquist	Monitoring plots dominated by Lythrum salicaria and control plots without Lythrum salicaria for wetland bird activity, as well as monitoring Lythrum plants for beetle damage under garden netting and outside of garden netting in Lythrum salicaria dominated plots to observe if birds potentially use the bio-control beetles on the plants as a food source. To see if there is a difference in activity in and utilization of plots dominated by Lythrum salicaria and those without the plant by native bird species, and to see if there are differing amounts of beetles and damage under and outside of netting.

4/22/2009	Richard Back	Aquatic Ecology at Rice Creek Field Station		Rice Creek is a 15 km long stream which drains a watershed of approximately 50 km2 of Oswego County (NY) into Lake Ontario approximately 2 km west of SUNY-Oswego campus. Originating near Granby, NY, the stream flows north through a mixed landscape of wetland, forest and residential areas, and includes small impoundments at Fallbrook and Rice Pond. A variety of course and individual research projects have been conducted in recent years covering a range of topics from water and sediment chemistry, aquatic insect distribution and phenology, fish community evaluation, to measures of ecosystem function. An overview of the approaches used by, and data generated from these studies will be presented. I will also discuss the prospects of establishing a more routine monitoring program, and opportunities for hypothesis-driven research projects examining the aquatic ecology of Rice Creek.

4/22/2009	Mark Bender	The Influence of Invasive Common Buckthorn on Litter Fall Patterns at Rice Creek Field Station	Eric Hellquist	Forest edges in temperate deciduous forests can influence species frequency and abundance. Forests with edge communities are often colonized by non-native vegetation. At Rice Creek Field Station, Rhamnus cathartica is a dominant understory tree often associated with edges. By using leaf litter traps placed at three selected sites, we determined the quantity, rate, and composition of leaf fall. Collection occurred weekly from October 1st to November 19th. Leaf litter mass and tree species frequency at collection sites was quantified. Total leaf litter biomass across the three sites was not significant ($p>0.05$), whereas there was a significant ($p<0.05$) affect of time on leaf litter fall. Continuing research indicates that Rhamnus may release foliage later in the autumn, thus influencing carbon distribution patterns in forest communities.
4/22/2009	Diane Chepko-Sade	Longitudinal Study of Individually Marked Short-tailed Shrews (Blarina brevicauda)		no abstract provided

4/22/2009	Lucina Hernandez	Science: The Key to Face the Challenges of Rice Creek		Rice Creek Field Station, was created in 1962 by SUNY-Oswego to preserve an area for research and teaching. Later SUNY-Oswego saw the value of the area for public education. During the years the area has also has been used for recreation. Thus, currently Rice Creek Field Station offers four important services to the community: Research, teaching, public education, and recreation. The current challenge of Rice Creek is to continue providing these four services without losing the integrity of the natural system nor its value as an important element in the connectivity with other forested patches in the region. This last point is important because such conductivity provides habitat to highly mobile animals such as flying species (insects, birds and bats) and medium and large mammals. This challenge can be met through scientific investigation. During the years we have gathered excellent and valuable descriptive information about hydrology, geology, edaphology, biodiversity of vertebrates and Lepidoptera. Additionally from August 2005 we have data of some weather parameters (temperatures, rainfall). Nevertheless we have few data about the processes that maintain the complexity of habitats in the area. We know that the systems are dynamic, and that specific species or groups of species could be sensitive's to natural or anthropogenic disturbances. Some questions to answer to help us understand how this system works are: (1) What is the primary productivity in Rice Creek, (2) How is carbon is captured, (3) What are the changes in the biodiversity of the different groups due to the rainfall, snow and temperature variability,(4) What are the effect in the reproductive cycles of some species due to variability in temperatures (changes in food). There are another set of important question related to the urban and suburban areas such as (5) What is the displacements of different carnivores, (6) what is the impact of the human traffic in the trails to the wildlife. There are many other important questions to answer and the most interesting is that we could develop these scientific projects in one area close to the campus and with the involvement of many students. For many of them maybe this will be the first area where they touch environmental scientific studies. These types of studies will also better prepared Rice Creek to offer public services.

4/2/2009	Diann Jackson, Brittany Muller, Wendy Paterson	Winter Bird Populations at Rice Creek Field Station Poster		An annual survey of birds visiting feeders during the winter was conducted at Rice Creek Field Station as part of a larger study sponsored by Cornell University. Our data contributed to the tracking of winter bird populations and monitoring of long term trends in bird distribution and abundance in North America. SUNY Oswego students and community members were able to participate and learn more about birds wintering in the area.
4/22/2009	Julio Mallonga	Water and Air Temperature Analysis of Rice Creek Field Station	Richard Back, Amapalavahar Nanthajumar	Long term local water temperature and air temperature data contribute to our holistic understanding of an aquatic ecosystem. In this study we verify significant relationships between water/air temperatures. Three years of high frequency (30 minute) water temperature data obtained from in situ data loggers. Corresponding meteorology data obtained from Rice Creek Field Station weather station. Semi-monthly and monthly average data will be presented with discussion of lag times between water/air temperatures. Time series analysis was then used to analyze trends in water/air temperature. Furthermore, we explore the seasonal fluctuations of water temperature and their correlation over a three-year period at Rice Creek Field Station. From this study we learn that short-duration experiments may not allow for sufficient data for significant forecasts of temperature. Even though our data covered a three year time period, we were not able to see any long term evidence of global warming.

4/22/2009	Kamal Mohamed	Spatial Patters and Characterization of Tree Species at Rice Creek Field Station: An Example of a Northeastern Deciduous Forest		This study is a synopsis of work done by students in Field Ecology. It is designed to look at the plant community composition and structure at Rice Creek. Multiple ecological survey methods were used to characterize the forest type and determine its successional stage. From this survey density, frequency, and cover were calculated for each tree species. Pattern of distributions were determined using Poisson distribution. Dominant species were calculated from calculating the importance values and cover. Analysis indicated the plot under study was a secondary growth deciduous forest in its mid successional stage. The relatively small trunk diameters showed that the forest had not reached its climax yet. The forest is composed of multiple layers, with less than 100% cover, and dominated by white ash (Fraxinus Americana). Subdominant species include black cherry, Norway and sugar maple.
4/22/2009	Andrew Nelson	Invasive species Management at Rice Creek Field Station		Species that aggressively displace previously existing populations of other species are considered "Invasive". Most invasive have become established as the direct or indirect result of human activity within historic times. Invasive plants at Rice Creek Field Station include: 1) those that have become established as an integral part of the local flora and can be expected to occur naturally at any site that provides suitable habitat, 2) those that were purposely introduced and have become so widespread as to preclude the possibility of control or eradication except in select, limited areas, and 3) those that have arrived in recent years and are susceptible to control or eradication with feasible and affordable effort. Control of species in this latter category has been part of the property management program at Rice Creek since 2002. Details and results of this effort are presented.

4/22/2009	Wendy Paterson	A Comparative Survey of Galling Species in Natural and Urban Environments	Karen Sime	Insect- and mite-induced galls generally cause no harm to plants because their populations are normally small. Human changes to the environment are often associated with higher population densities of galling insects and, consequently, a higher incidence of damage to host plants. Both green ash (Fraxinus pennsylvanica) and sugar maples (Acer saccharum), and their galling insects and mites are found in both the urban setting of the city of Oswego, NY, and in the natural environment of Rice Creek Field station (RCFS). The population densities of gallmakers on these trees were compared by survey in both environments. The results did not support the hypothesis that galling arthropods would favor urban over naturally forested environments. Out of the ten galling species of ash trees and maples found in both environments only one was found to be significantly more abundant in town and four were found the have significantly larger populations at RCFS.
4/22/2009	Karen Sime	Performance of Black Swallowtail Larva on Different Food Plants		The black swallowtail butterfly feeds on a variety of native and introduced Apiaceae. This study was designed to investigate whether some of these plants are more suitable than others for larval growth and development. In summer 2008, a preliminary field investigation was conducted at Rice Creek Field Station to evaluate the suitability of wild carrot for larval growth. In addition, larval growth and development were compared on three plant species in the laboratory. The results indicate that there are inherent differences in the ability of black swallowtail caterpillars to use different food plants, and suggest that plant toxins may play an especially important role in determining plant suitability.

4/22/2009	Alfred Stamm	Climate of Rice Creek and the Oswego Area		The discussion of local climate will look at various weather parameters throughout the year including wind, temperature, rain, snow, solar radiation and ultraviolet radiation. In addition available web sites will be given.
4/22/2009	Dave Valentino	Applications of High Resolution Electric Resistivity Techniques in the Study of the Hydrogeology of Glacial Deposits at Rice Creek		This presentation will be a summary of shallow-earth geophysical field research to study the hydrogeology of glacial deposits that is associated with the Rice Creek field station. Early project involved collection of 1D information over an extended time period to search for correlations between meteorological events and subsurface electrical response. Later, projects involved 2D surveys (vertical and horizontal), to produce electrical resistivity maps that were interpreted. Finally, the last generation of geophysical research involved 3D analysis. All of these work has integrated undergraduate geology majors, and has been presented at regional geological conferences. The following topics will be summarized during this presentation: 1. Assessing the architecture of the Rice Creek drumlin; 2. Mapping the surface water-groundwater interaction in the glacial till; 3. Mapping the surface- and groundwater interaction in the wetland to upland transition; 4. Three dimensional analysis of glacial till transitional to Rice Creek; 5. Three dimensional modeling of the Cornish Hill drumlin.

4/22/2009	John Weeks	The Early Years at Rice Creek		The topic of discussion will be when and how Rice Creek Field Station was founded. John weeks will reminisce about the people which were involved with the field station in the beginning. Highlights will be made on past educational research projects and natural studies conducted on the property. A PowerPoint slide presentation of photos will be presented.