Science
Collaboration
immersion
inquiry
innovation

Sc:iii

## Summer Work Site Opportunities

| # | Location | Description | Number of Teams |
|---|---|---|---|
| 1. | **Florida Institute for Human and Machine Cognition**<br>**40 S. Alcaniz Street**<br>**Pensacola, Florida**<br><br>**Megan Pratt**<br>**Education Outreach Coordinator** | **Overview of academic research**: grant writing, publishing, and other fundamental aspects<br>**Knowledge Modeling and Sharing**: training in CmapTools, creation of new CmapTools modules, introduction to efforts toward CmapTools in education, discussion of novel uses of CmapTools (Semantic Web, Expertise Studies, etc)<br>**Biologically Inspired Locomotion**: introduction to robotics (control systems and mechanical engineering) Educational Outreach: participation in developing and reviewing inquiry science modules for various science education outreach programs | **2** |
| 2. | **DEP**<br>**Work will take place in Escambia and Santa Rosa Counties**<br>**Office Location: 3000 Environmental Place,**<br>**Pensacola, FL 32514**<br><br>**Amy Baldwin** | Greenhouse Modules: Hands on experience in identification, collection, propagation, and planting of estuarine, shoreline, coastal upland and riverine vegetation with support staff from greenhouses and Park Service biologist.<br><br>Develop education modules around greenhouse operations to be located in a high school in each county and one in an elementary school. The modules will introduce horticulture, plant identification/classification, value of native plants, threatened and endangered plants, concept of genetics and gene pool integrity, importance of diversity, the necessity of plants in food chain. | **1** |
| 3. | **DEP**<br>**Work will take place in: Escambia to Okaloosa**<br>**Office Location: 3000 Environmental Place**<br>**Pensacola, FL 32514**<br><br>**Amy Baldwin** | Sea grass/Oyster Modules: Hands on experience taking and evaluating surface water quality measurements, evaluating sea grass donor and receiver sites, propagating of sea grasses, salvaging sea grasses, evaluating receiver sites for oyster reefs, collecting and deploying oyster shell, monitoring restored sea grass planted areas and oyster beds with support staff.<br><br>Develop educational curriculum modules around the sea grass and oyster restoration efforts. The modules introduce the value of natural 'living shorelines'; use of native shoreline plants as buffers to stabilize sediments and reduce wave energy; use of a native shoreline buffer eliminates cost of fertilizers, herbicides, irrigation and mowing; use of recycled oyster shell and elimination of waste to landfills; value of near shore oyster reefs for marine habitat; increased shoreline protection provided by reefs; improved water quality from plants and oysters. | **1** |
| 4. | **DEP**<br>**Work will take place in: Okaloosa**<br>**Office Location: 160 Governmental Center, Pensacola, FL**<br><br>**Brad Hartshorn** | Total Maximum Daily Load modules: Hands on experience with water quality equipment and sampling, laboratory analyses, data analysis, biological assessments with field activities in Choctawhatchee Bay watershed with TMDL, chemistry and biology staff.<br>Develop curriculum and classroom modules around our TMDL process that explores the importance of using uniform SOPs, dangers of using non QA-ed data, statistical evaluation of sample results, use of statistics in the determination of water impairment, efficiency in using a rotating evaluation schedule, the potential impacts to stakeholders when TMDLs are implemented. | **1** |

# Sc:iii Summary Work Site Opportunities

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| 5. | **DEP<br>Work will take place in: Escambia and Santa Rosa<br>Office Location:<br>3000 Environmental Place<br>Pensacola, FL 32514<br><br>Tim Simmons** | Ambient air monitoring in the areas. Air quality is an issue in the area and including our educators with hands-on experiences with sources, measurement and prevention measures.<br>Develop educational curriculum module around our ambient air monitoring program that could be used to educate students on how our ambient air quality program works, how the data is used. The module would include a component where the classes would gather the data from the community, evaluate and report trend information on what is impacting their air quality (facility emissions, average daily vehicle miles traveled, per capita energy usage, population trends, etc.) – designed to raise awareness of air quality issues and impacts. | **1** |
| 6. | **Office of Environmental Education<br>DEP<br>3900 Commonwealth Blvd. MS 30<br>Tallahassee, FL 32399<br><br>Greg Ira** | The teachers will participate in the design and implementation of a three-day workshop to evaluate the effectiveness of three pilot education projects in the Gulf of Mexico region. Tasks include the design and administration of a teacher survey; compilation of project results from three pilot sites; analysis of project and teacher survey results; packaging and presentation of the results in a format appropriate for the Gulf of Mexico Alliance Environmental Education Working Group and a submission to the National Science Teachers Association Conference. Additional responsibilities may include the review of field labs using the procedures established in the 'Environmental Education Materials: Guidelines for Excellence' by the North American Association of Environmental Education. The teachers will also participate in collecting baseline data for water quality monitoring for the Wakulla Springs/St. Marks Watersheds. The collected data will be used as part of an ongoing monitoring project at one of our LIFE sites. | **1** |
| 7. | **City of Fort Walton Beach<br>203 Hollywood Blvd, NW<br>Fort Walton Beach, FL<br><br>Joy Brown<br>Conservation Program Manager** | Teachers will be monitoring the progression of oysters in the oyster gardening program for: growth, mortality, predators, etc. The data will be combined in GIS to determine geographic factors for future reefs. Basic water quality will also be collected using Eureka probe to collect real-time data. | **2 total<br>1 already assigned**<br>( Grant, Farland, Pack) |
| 8. | **Apalachicola National Estuarine Reserve<br>350 Carroll St.<br>Eastpoint, FL 32328<br><br>Lee Edmiston, Research Coordinator** | The summer science teachers will be participating in the Apalachicola NERR's normal research and monitoring activities. These include trawling, counting, and identification of fish and benthic invertebrates, deploying in-situ data loggers that monitor estuarine physical characteristics, collecting nutrient samples, monitoring sea turtle nests, monitoring erosion of beaches, measuring oyster growth and other activities that we carry out monthly. They will also become familiar with why we do it and what the data is used for.<br>**For this experience:<br>Teacher participants must remain in the boat and provide written permission of district school superintendent to Brenda Crouch at PAEC.** | **1<br>Already assigned**<br>(Edmiston, Phillips) |
| 9. | **Nokuse Plantation<br>13292 Co. Highway 3280<br>Bruce, Florida 32455<br><br>Matthew J. Aresco, Ph.D.** | Participants will work with staff biologists on a project already underway on Nokuse Plantation property to determine the minimum area required for gopher tortoises (*Gopherus polyphemus)* to maximize site fidelity.<br>The specific objective of the study is to determine the minimum size of a relocation site necessary to maximize site fidelity of translocated tortoises without fencing. | **2 total<br>1 Walton,<br>1 Washington or Holmes please** |

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| **10.** | **Florida Fish and Wildlife Conservation Commission<br>Box-R Wildlife Management Area<br>Apalachicola River Wildlife and Environmental Area<br><br>Apalachicola Area<br><br>John G. Himes, Ph.D.** | We will use drift fences to trap and survey for reptiles and amphibians in areas where we are restoring plantation of slash pine back to the original and natural wet prairie habitat. Our objective is to monitor the number and diversity of reptile and amphibian species during restoration to determine the efficacy of such efforts (e.g., would expect greater numbers and diversities as the slash pine plantations are restored back to web prairie). This effort would entail accompanying our trapper to help check the traps and assist with recording the capture data. hiking boots and field clothing will be essential, as well as any other measures that would typically apply while conducting summertime field work (e.g., sunscreen, sunglasses, wide-brimmed hat, insect repellant, drinking water, etc.). The trapping sites are centered around the town of Apalachicola and since trap-checking will take most of the day; those individuals who are located closest to or in Gulf, Franklin, and Liberty Counties would be most readily able to participate in this effort. | **1** |
| **11.** | **Carter Tract of Econfina Creek Wildlife Management Area<br>Chain Lake Road, Chipley—Greenhead Area<br><br>Kelly Bunting, Biologist** | Participants will be outdoors each day, collecting scientific data on multiple taxa found on the Carter Tract. Surveys may include: checking Wood Duck nest boxes for use; hiking sand hills to locate presence of gopher tortoise burrows, and measuring burrow width and use; trapping and banding mourning doves; etc. | **1** |
| **12.** | **St. Marks National Wildlife Refuge<br>1255 Lighthouse Road<br>St. Marks, FL 32355<br><br>Robin Will** | Participants will conduct work such as:<br>• Gopher tortoise burrow surveys with GPS<br>• Exotic plant removal<br>• Pre or Post-burn prescribed fire monitoring for vegetation diversity<br>• Survey of wiregrass restoration @ Panacea Field - transects<br>• Develop native wildflower landscaping nursery | **1** |
| **13.** | **Tyndall Air Force Base<br>139 Barnes Drive, Suite 2<br>Tyndall AFB, FL 32403<br><br>Heather Luckarift, Ph.D.<br>Glenn Johnson, Ph.D.** | As a part of the Microbiology and Applied Biochemistry Research team at the Air Force Research Laboratory, the research experience will be to investigate the ability of common household spices to kill bacterial cells. Spices have been used as preservatives throughout history and are known to have antimicrobial properties. As such, spices may provide a remedy for bacterial infection when modern antibiotics are not readily available. The research team will learn the importance of aseptic technique in order to culture a range of bacterial species. A selection of spices, e.g. chili powder, ginger, allspice and garlic will then be investigated for their ability to inhibit the growth of pathogenic bacteria such as *E. coli*. Microscopy will be used to visualize bacteria exposed to inhibitory spices. Data will be collected and conclusions drawn on the efficacy of each spice and documented as a final report and group presentation. In addition to hands on microbiology experience, participants will be exposed to a dynamic research program pursuing cutting-edge work in biotechnology and nanotechnology. | **1** |
| **14.** | **Tyndall Air Force Base<br>139 Barnes Drive, Suite 2<br>Tyndall AFB, FL 32403<br><br>Jeff Owens, Ph.D.** | Recent studies have shown that Battle Dress Uniform (BDU) material treated with halamide-forming siloxanes via microwave irradiation exhibits increased biocidal capacity, increased neutralization of Chemical Warfare Agent simulants, and increased environmental stability compared to their heat treated analogs. However, a comparison of the heat-treated vs. microwave-treated materials with respect to the minimum active halogen necessary for biocidal activity of these materials has not been performed. Research will consist of an evaluation of the antimicrobial properties vs. active halogen content of microwave and heat treated 50:50 nylon-cotton BDU material. Required will consist of iodometric titration of active halogen and of bacterial streak plates. The team will present the results and conclusions in an academic style seminar. This work may lead to a technical publication, for which all participants will be recognized. | **1** |

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| **15.** | **Okaloosa-Walton College<br>Mattie M. Kelly Cultural and Environmental Institute<br>100 College Blvd.<br>Niceville, FL<br><br>Allison Beauregard, Ph.D.** | Two possible projects are:<br>1. Assessment of the impact on water quality of two park restoration projects (Liza Jackson Park in FWB and Clement Taylor Park in Destin). We collect and process water samples at stations at the parks, analyze them in the lab for nutrients and chlorophyll and analyze the data.<br>2. Experiments to look at the nutrient limitation of several sites on the estuary. We will collect water samples and incubate then with nutrient additions and monitor phytoplankton growth within 24 hours. | **1** |
| **16.** | **National High Magnetic Field Laboratory<br>1800 East Paul Dirac Drive<br><br>Pat Dixon, Ph.D.** | Teachers will be placed with scientists from the Magnet Lab (and Applied Super-conductivity Center) to conduct research that will be negotiated with the scientist/ mentor. Four hours will be spent in the lab itself and the remaining 2 hours will be spent with educators and other research experience participants in the Center for Integrating Research & Learning. Teachers will attend workshops, seminars, lectures, in an effort to find ways to translate the research experience for the classroom. Research experiences will be based on materials research, nanoscale research, and research on high temperature superconductors. | **3** |
| **17.** | **DEP<br>Falling Waters State Park<br>Ponce De Leon Springs State Park<br><br>Scott Sweeney** | There will be many options for research and monitoring at Falling Waters State Park and Ponce De Leon Springs State Park. During the initial meeting with the teacher teams, we will collectively decide which projects to work on. Possibilities are invasive exotic plant species and gopher tortoise research. Additionally, there will be the opportunity for in-depth study of unique plant communities and development of interpretive/educational programs from the research experience. | **4 total- two teams at each location** |
| **18.** | **Choctawhatchee Basin Watershed<br>100 College Boulevard<br>OWC<br>Niceville, FL<br><br>Joni Barreda, Grant Coordinator** | Monitoring of 55 stations throughout all 15 rare coastal dune lakes in South Walton County, and three stations along the Choctawhatchee River is conducted monthly in order to establish baseline water quality data for our local water resources, which can then be used to help identify areas of poor water quality, determine the causes of water quality degradation, and identify solutions to improve water quality throughout the Choctawhatchee basin. Surface and bottom-level readings of the following parameters are recorded at each station: temperature, dissolved oxygen, pH, salinity, oxygen saturation, and water clarity. Water samples are also collected which are analyzed by the Florida LAKEWATCH program for nutrient concentration (total nitrogen and total phosphorus) and algae content (chlorophyll). | **1 Walton County Only due to agree-ments and funding sources** |
| **19.** | **Eglin AFB, Natural Resources Branch<br>Jackson Guard<br>107 Highway 85 North<br>Niceville, FL 32578<br><br>Erica Lee, Environmental Scientist IV** | We will offer these options from which the teacher team may choose:<br>**Sand hill vegetation surveys**<br>• Teachers will use a compass/GPS to navigate to monitoring sites<br>• Teachers will work alongside biologists with recording data in PDA's (personal digital assistant – handheld computer for fieldwork) and with plant identification while surveying understory vegetation (much more detailed work)<br>• Teachers will conduct overstory and midstory vegetation surveys and will record data in PDA's while working more independently, but in the same vicinity as the biologists (not as detailed as the understory vegetation and much easier to learn)<br>**Plant collection and identification**<br>• Teachers will be responsible for collecting and correctly identifying plants (assistance will be provided)<br>• Teachers will press and dry identified plants for the plant catalogue | **1 Already assigned** (Andvik, Stephen-son, Orozo-Hoffnung) |

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| **20.** | **North Florida Research and Education Center - Marianna Unit (IFAS) 3925 Highway 71, Marianna, FL 32446**<br><br>**Barry Tillman, Ph.D.** | The goal of my research program is to develop improved varieties of peanut. As such, it can be described as an "applied genetics" program and is commonly referred to as "plant breeding." Ask yourself, "Where do all of the different colored roses come from?" The answer is simple; a plant breeder, or more often a team of plant breeders, used the process of plant breeding to develop them. Plant breeding is a long-term process often requiring 10-15 years to complete. In other words, it may have taken someone 12 years to develop your favorite rose variety!<br>During the 15-day experience with the UF-IFAS Peanut Breeding Program, science teachers will be introduced to the science and art of plant breeding. We will start with an introduction to plant breeding that will describe the process in general terms from start to finish. Part of the introduction will include a tour of the field nurseries in Marianna to where we will demonstrate the plant breeding process. During the early summer we will conduct some laboratory, field and greenhouse experiments relating to seed quality of various peanut varieties and methods to measure the seed quality. We will also test peanut seeds for the concentration of various fatty acids, the building blocks of the oil in peanut seeds and then conduct artificial hybridizations between peanut plants. Later in the summer, we will evaluate peanut varieties for their reaction to disease, plant growth habit and pod and seed size. | **1** |
| **21.** | **Suwannee River Water Management District 9225 CR 49, Live Oak, FL 32060**<br><br>**Louis Mantini, Environmental Specialist** | This experience will include environmental site review for Environmental Resource Permit (ERP) applications for development, agricultural or forestry activities. Participants will assess wetlands and soils. | **1 Already assigned** (Wakefield, Bass, Frakes) |
| **22.** | **Suwannee River Water Management District 9225 CR 49, Live Oak, FL 32060**<br><br>**Beau Willsey .** | This experience will involve monitoring rare plants, native vegetation, invasive exotic plants and gopher tortoises on water management district lands. This will include multiple surveys and employment of a variety of sampling designs.<br>The **work will take place on multiple land tracts in Madison, Jefferson and Taylor counties** | **1** |
| **23.** | **Oglesby Plants International 2664 SR 71 N Altha, FL 32421**<br><br>**Marian Osiecki, Breeder/ New Product Development** | This field experience will have two components.<br>Participants will be involved in work at the lab including establishing plant tissue cultures for the production laboratory. Participants' work will involve establishing plant cultures, media preparation and culture transfer work. This work will be done in a clean laboratory environment and casual clothing will be worn. Some bending and lifting will be required.<br>For the second component, participants will work in a traditional tropical plant breeding program to develop new plant varieties for the horticulture industry. In the new product development aspect, participants will learn methods used for pollination, seed harvesting, seed sowing and selection methods. Additionally, participants will learn about tropical plants, their cultural requirements and diversity. This work will be in a greenhouse with warm, wet and humid conditions. Some bending and lifting will be required. | **1 2-person Team Already Assigned** (Davis, Carson) |

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| **24.** | **Florida Department of Agriculture and Consumer Services Division of Food Safety, Chemical Residue Laboratory Chemical Residue Lab #3 3125 Conner Blvd. Tallahassee, FL 3239901650**<br><br>**Walter Hammack** | The Chemical Residue Laboratory is tasked with the sampling and analysis of a wide variety of food and related products for pesticides, antibiotics, and other chemical contaminants. The laboratory employs analytical chemists and laboratory technicians primarily for this task. Educators participating in laboratory internships would gain an understanding of the chemical and instrumental techniques required to extract, purify, measure, and report chemical compounds at low levels in food products. They would also develop an understanding of how the laboratory interacts with and supports our Agriculture communities locally and internationally. Primary focus would be on hands-on analysis of samples for various chemical compounds. This includes extraction of residues with chemical solvents and analysis of samples using instrumental techniques, such as, mass spectrometry. | **1** |
| **25.** | **Florida Division of Forestry Department of Agriculture and Consumer Services 2229 South CR 53 Madison, FL 32340**<br><br>**Madison County Forester Jim Fleming** | Interface with timberland owners to determine property management needs, research requirements for supplying assistance requested, coordinate with associated agencies/disciplines to insure optimum benefits, develop and prepare management plan/s to facilitate desired objectives. | **1** |
| **26.** | **Tate's Hell Wildlife Management Area Florida Fish and Wildlife Conservation Commission 290 Airport Road Carrabelle, FL 32322**<br><br>**Adam Warwick, Wildlife Biologist** | Participants will be monitoring red-cockaded woodpecker nests, building bear resistant garbage containers, conducting gopher tortoise surveys and visiting and educating residents about living in an area with bears. | **1** |
| **27.** | **Department of Physics, Laser Plasma Beam Physics Laboratory Florida A and M University Science Research Building, Room 409 FAMU, Tallahassee, FL 32307**<br><br>**Dr. Ronald L. Williams, Professor of Physics** | Team members will join Professor Williams and his graduate student as they investigate issues related to the acceleration of electrons to relativistic energies using relativistic plasma waves. The goal of the research is to measure the amplitude of plasma waves using an electron beam and a laser, and to compare the measurements with theoretical and computational predictions. Tasks include developing computer models of the experiment, setting up the experimental apparatus, making measurements, and if successful, analyzing the computer and experimental results. | **1 Already assigned possibly one more 2-person team** (Williams) |

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| **28.** | **St. Vincent National Wildlife Refuge<br>US Fish and Wildlife Service<br>479 Market Street<br>Apalachicola, FL 32320<br>St. Vincent Island-Apalachicola<br><br>Monica Harris, Refuge Manager** | Assist refuge staff in monitoring the pack of red wolves (5 animals) located on St. Vincent Island (between Apalachicola and Port St. Joe). All animals are collared and require monitoring at least 2 times a week. Participants would drive around the island and use the listening device. In addition, the experience would involve assisting the sea turtle patrol in morning evaluations of the beach on St. Vincent Island. The island is approximately a 1/4 mile boat ride from Indian Pass. Individuals need to be physically fit to withstand the heat and insects. Other activities will include checking lake gauges and rain gauges.<br>Participants must provide written permission on letterhead from their district school superintendent to Brenda Crouch. | **1** |
| **29.** | **Florida State University<br>Coastal and Marine Laboratory<br>3618 highway 98<br>St. Teresa, FL 32358<br><br>R. Dean Grubbs, Ph.D.** | We will be conducting fishery-independent surveys of the diversity and abundance of sharks and rays in shallow coastal waters of the Big Bend region of Florida using gill nets and longlines. This work will involve relatively long days on small vessels. All sharks and rays will be identified, measured, and tagged. Hydrographic data and habitat information will be collected. The science teachers will assist in gear deployment and retrieval and data collection. We will also be conducting experiments on tag retention and effects on growth of captive juvenile sharks. The teachers will assist in care of the captive sharks and collection of growth data. Finally, the teachers will gain experience in the laboratory by assisting with analysis of previously-collected biological samples to investigate the reproductive biology and feeding ecology of two species of sharks from Hawaii.<br>**Dr. Grubbs will handle sharks - not teachers.**<br>**For this experience:**<br>**Teacher participants must remain in the boat and provide written permission of district school superintendent to Brenda Crouch at PAEC.** | **1 already assigned**<br><br>(Romer, Nichols, Guilford) |
| **30.** | **Florida State University<br>Coastal and Marine Laboratory<br>3618 highway 98<br>St. Teresa, FL 32358<br><br>Christopher D. Stallings, Ph.D.<br>Laura Petes, Ph.D.** | The field experience will be in the area of marine ecology. Drs. Chris Stallings and Laura Petes are studying ecological processes in the Northeastern Gulf of Mexico. Petes is conducting research on how environmental variation (e.g., in temperature, Salinity) affect growth, mortality, and settlement of oysters in Apalachicola Bay, FL. Teachers in the "Immersion" program will assist Petes with lab experiments and other lab work at the FSUCML. Stallings is studying animal distribution patterns and predator-prey dynamics in sea grass beds in the Big Bend region of Florida. Participants will help with lab experiments and field preparations at the FSUCML.<br>**For this experience:**<br>**Teacher participants must remain in the boat and provide written permission of district school superintendent to Brenda Crouch at PAEC.** | **1 already assigned**<br><br>(Herron, Callaghan) |
| **31.** | **Niceville sub-office, Panama City Fisheries Resources Office<br>US Fish and Wildlife Service<br>107 Highway 85 N,<br>Niceville, FL 32578<br><br>Bill Tate, Fish Biologist** | The Niceville sub-office is primarily responsible for aquatic resource management on Eglin Air Force Base. Teachers will work to support new or ongoing aquatic monitoring and restoration projects on Eglin. I have several ongoing projects, but I think monitoring our stream restoration project in Mill Creek will be the most pertinent to this program.<br>In 2007, we restored approximately 2,500 feet of stream through the Eglin golf course to benefit the endangered Okaloosa darter. Since that time, we have been routinely monitoring physical, chemical, and biological changes in the new stream channel. Teachers will be responsible for collecting data and making comparisons to previous surveys to assess change within the stream through time. This work will require participants to work outdoors, in streams. In addition to this project, we will explore the use of conservation science on a large military base. | **1** |

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| **32.** | **Shellfish Center, Division of Aquaculture Florida Department of Agriculture and Consumer Services 260 Dr. Frederick S. Humphries Street**<br><br>**Joe Shields Environmental** | The Division of Aquaculture is responsible for opening/closing of shellfish harvesting waters to protect human health; plays a key role in the regulation of aquaculture facilities and shellfish processing plants; and ensures the continued productivity of oyster reefs through a restoration program. The flagship of the Division is the Shellfish Center field office located in Apalachicola, Florida. The two Bureaus (Aquaculture Environmental Services (AES) and Aquaculture Development (AD)) which handle the aforementioned duties are represented here by thirteen employees. Additionally, the Shellfish Center houses a laboratory where shellfish growing water samples are tested by five employees.<br>In Florida, shell or "cultch" planting, as well as, oyster relaying and transplanting are important resource management tools for maintaining and enhancing productive oyster habitat. This practice provides resource managers the opportunity to mitigate resource losses, to enhance productivity, and to contribute direct economic benefit to the oyster fishery. Resource development projects called "relaying" take advantage of the oysters' ability to cleanse itself of contaminates (depurate) and offer a practical means to use a previously debilitated resource, making them safe for human consumption. Relaying and transplanting activities are often conducted as cooperative management programs between the Department and local oystermen's associations. Teachers would be involved in both relaying and planting activities. | **1 Already Assigned** (Friedman, Shepard) |
| **33.** | **Florida Natural Areas Inventory Field Sites within Leon County 1018 Thomasville Road, Ste. 200C Tallahassee, FL 32303**<br><br>**Daniel Hipes, Chief Scientist** | 1. A team will conduct a rare butterfly survey (and possibly other insects or animals) at one or more local parks (at least one will be a known location) to document the extent of the population. Data will be entered into our rare species database and a report will be produced to document the survey.<br>2. A team will conduct an invasive exotic plant survey at a local park. The team will be taught how to identify exotic plants found in the area. They will use GPS/dataloggers to record the survey data. Data will be transferred to desktop for analysis and display. The data will be entered into our invasive exotic species database, and a report will be produced to document the survey. | **2** |
| **34.** | **Florida Department of Transportation Environmental Management Office Materials Lab**<br><br>**1074 Highway 90 Chipley, FL Joy Giddens, Engineer Specialist Same Weede, Professional Engineer Administrator** | **1. Environmental Management Office - Field reviews and assessments: endangered species; wetland delineation; noise studies**<br>**2. Materials Lab - field: pull soil, aggregate, asphalt and concrete samples. Lab: conduct sample tests.** | **2** |

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| **35.** | **USDA Natural Resource Conservation Service**<br><br>**Chipley Service Center**<br>**1424 West Jackson Street**<br>**Chipley, FL 32428**<br>**Quincy Soil Survey Office**<br>**2148-A West Jefferson Street**<br>**Quincy, FL 32351**<br>**Most days will meet at Washington County Agricultural Center in Chipley, some days in Quincy**<br><br>**Andrew Williams, Area Soil Scientist** | Teachers will assist in collecting field data to help update the *Soil Survey of Washington County.* Most time will be spent in the field writing soil descriptions and collecting soil map unit transect data. Some time will be spent in the Quincy Soil Survey Office, however on most days the group will meet in Chipley at the Agricultural Center. | **1** |
| **36.** | **Northwest Florida Water Management District**<br><br>**Sand Hill Lakes Mitigation Bank**<br>**81 Water Management Drive**<br>**Havana, FL 32333**<br><br>**David Clayton, Environmental Scientist** | Participant activities will include:<br><br>• An introduction and tour of the Sandhill Lakes Mitigation Bank and permitting overview of restoration activities.<br>• Bird Point counts and Herpetological Survey<br>• Vegetation Sampling: Restoration of wet flatwoods: a comparison of shrub reduction treatments<br>• Evaluation of direct seeded wire grass areas and survival of planted wire grass plugs<br>• Site visit to Lynn Haven salt marsh restoration and impact site<br><br>Please bring plenty of water, gator aide, sunscreen and lunches…bathrooms are available near entrance.<br><br>**Work will take place in Washington County at the Sand Hill Lakes Mitigation Bank.**<br>**To see a description and map the location of the Sand Hill Lakes Mitigation Bank, visit the URL below:**<br>http://nwfwmdwetlands.com/nwfwmd/pdfs/brochure_062806compressed.pdf | **1** |
| **37.** | **U. S. Fish and Wildlife Service**<br>**Chipola River/ Woodlands in Calhoun, Jackson, and adjacent counties**<br><br>**Sandy Pursifull, Fish Biologist**<br>**Vivian Negron-Ortiz, Botanist** | The team will work with two Fish and Wildlife Service biologists from the Panama City Field Office; a freshwater mussel biologist and a plant biologist, so they will receive two very different field experiences.<br><br>Research and tasks with the mussel biologist will include survey work in the Chipola River and its tributaries in Jackson and Calhoun Counties for rare freshwater mussel species. A project to study how well mussels survive after a non-invasive DNA sample is taken will be conducted. This work will require walking in streams in chest waders and using hands to find mussels in bottom sediments. (Chest waders will be provided). | **1** |

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| **38.** | **U. S. Fish and Wildlife Service<br>Chipola River/ Woodlands in Calhoun, Jackson, and adjacent counties<br><br>Sandy Pursifull, Fish Biologist<br>Vivian Negron-Ortiz, Botanist** | The team will work with two Fish and Wildlife Service biologists from the Panama City Field Office; a freshwater mussel biologist and a plant biologist, so they will receive two very different field experiences.<br><br>Research and tasks with the mussel biologist will include survey work in the Chipola River and its tributaries in Jackson and Calhoun Counties for rare freshwater mussel species. A project to study how well mussels survive after a non-invasive DNA sample is taken will be conducted. This work will require walking in streams in chest waders and using hands to find mussels in bottom sediments. (Chest waders will be provided).<br><br>Research and tasks with the botanist will include rare plant surveys and identification, and using a GPS to mark locations in Jackson, Calhoun, and adjacent counties. A pollination study will likely be a research project and will involve pollinating the flowers by hand, then returning to the plants at a later date to ascertain if fruits are present. This work will possibly require long hikes through woodlands. | **1** |
| **39.** | **University of Florida IFAS North Florida Research and Education Center, Quincy<br><br>155 Research Road, Quincy, FL 32351<br><br>Jimmy R. Rich, Ph.D.,** Professor of Nematology<br>**Melvin V. Barber,** Biological Scientist | This experience is designed to:<br>1. Provide hands-on experience in the agricultural and biological sciences to enhance the capabilities of science teachers in the classroom.<br>2. Provide an overview of research and outreach programs conducted at the UF/ IFAS North Florida Research and Education Center, with specific research experience in the Nematology Research and Extension program at the Center.<br>3. Provide participants with hands-on training and experience in planning, initiation, maintenance, and data collection from laboratory, greenhouse and field experiments.<br>4. Provide participants with information on use and usefulness of data collected for citizens of Florida.<br><br>The work days for this experience **won't be** fifteen consecutive days, but instead will be spread over a more extended period of time. | **1** |
| **40.** | **Chipola College Department of Natural Science<br><br>Indian Circle, Marianna, Florida<br><br>Faculty from Department of Natural Science** | This experience will involve, a variety of field experience possibilities that may include: monitoring of ground water, geological studies, biotechnology, and botanical surveys. The specific schedule of activities is to be determined. | **3** |