

Section 5. CAREER PATHWAYS, CAREERS, EXAMPLE SAES

Agribusiness Systems Career Pathway

Agribusiness systems careers involve using technology to coordinate all activities that contribute to production, processing, marketing, distribution, financing, and development of agricultural commodities.

Careers associated with Agribusiness Systems

Agricultural Loan Officer, Agribusiness Manager, International Ag. Marketing Specialists, Marketing Communications Manager, Financial Officer

Example SAEs related to Agribusiness Systems

- Be a sales associate at a garden or farm supply store.
- Become an agricultural consultant for farm news for local radio or newspapers
- Conduct a study of commodity trading over a period of time
- Conduct insect scouting for a seed corn company.
- Create a custom labor venture: mow pastures, remove undesirable weeds from crops paint outbuildings, etc.
- Create and produce a weekly television or radio show about FFA and agriculture
- Create digital video programs about FFA
- Design a computer application plan for some agricultural facility or program
- Design custom computer programs using Excel or other software to solve problems for producers
- Form a cooperative with other students and share in profits of a greenhouse crop
- Job placement in food distribution, restaurant, etc.
- Job placement with local florist
- Job-shadow agribusiness professionals, visits to agribusinesses to interview personnel, educational tours, etc.
- Maintain the chapter webpage
- Make business cards, stationary, etc., for businesses or chapter members
- Marketing Christmas trees (at home or school provided facilities)
- Offer a custom parts and supplies delivery business to farms in your county
- Operate a business that computerized farmers' records
- Operate a custom spraying service
- Operate a hay hauling service
- Operate a lawn maintenance/mowing service
- Operate a poultry litter clean out service
- Operate custom combining service
- Operate custom heifer raising service
- Operate custom hog raising business
- Package fresh fruit or vegetable gift packs
- Pre-sell fresh meat to clients on a weekly basis
- Pre-sell fresh seafood to clients on a weekly basis
- Pre-sell fresh vegetables in family portions delivered weekly
- Preserve food for home use
- Processing creamed corn in a food processing facility
- Produce a weekly column for the local newspaper about agricultural issues
- Provide a custom barbecue service for community
- Provide a custom feed for livestock. Tap the organic, all natural, no-chemical market.
- Provide a hand weeding crew for local peanut/vegetable farmers
- Provide a sausage making business at home; can be sold if regulations are met
- Provide basic internet and email training to producers to increase their level of confidence in using technology
- Provide custom hay baling and/or hauling
- Provide farm sign business (manufacture, sale, install, and maintain)
- Provide livestock hauling
- Provide small engine maintenance and repair service
- Provide systematic maintenance and service on outdoor power equipment at home or at school provided facilities
- Purchase and resale aerial photographs from tax office to local landowners
- Remove pesticide jugs monthly from farms and transport to landfill
- Research the differences among farm management software systems
- Sell ready to freeze processed vegetables

- Start a basic computer help service for area Ag producers
- Start a composting business by buying cow manure from local farmers, bagging for resale
- Start a farm sitting business for vacationing farmers.
- Start a franchise of existing fruit/vegetable stand
- Start a kerosene route for homeowners (probably little demand in the summertime)
- Start a MSDS compliance business by compiling and maintaining current sheets for farms and in business in your county
- Start a recycling business (collecting and selling newspapers and plastics to recycling plants)
- Start an agricultural business promotion business. (Sell custom caps, T-shirts with farm or Ag business names or logos to clients.)
- Start an agriculture photography service (Animals, equipment, barns, families, children with animals, show animals)
- Start local farm produce sale paper and sell ads to farmers
- Start service that cleans leaves from gutters
- Volunteer to design a website for a local agriculture group
- Volunteer to do website and brochure development for local Ag businesses
- Work as a grain tester/handler for a local elevator
- Work as a service provider in grocery store
- Work as a teaching assistant for your local agricultural teacher and FFA advisor
- Work as an assistant sales manager at a turf equipment company
- Work as an intern for the local agriculture department
- Work at a seed corn dealership
- Work at the local feed store
- Work for a local tax accountant that handles ag customers
- Work for an ag auctioneer service
- Work for an ag marketing services company
- Work for an irrigation service provider
- Work for local cement company that installs ag applications
- Work for the local ag insurance agency
- Write "How To" pamphlets to sell at local garden supply stores. (Ex. How to Grow Tomatoes, etc.)
- Write news articles on agriculture or FFA for local newspaper for Ag. Communications

Power, Structure and Technical Systems Career Pathway:

Careers in this pathway involve applying of engineering, power hydraulics, pneumatics, electronics, structures and controls to agriculture, in order to develop ways to improve the processing of agricultural products.

Careers associated with Power, Structure and Technical Systems

Agricultural Engineering, Diesel Mechanic, Welder, Farm Equipment Mechanic, Global Positioning Technician

Example SAEs related to pathway

- Assist with GPS mapping for an agronomic services company.
- Build a patio for the home
- Build frames for raised beds for gardeners
- Build garden sheds for homeowners.
- Build handicap ramps in local community
- Build picnic tables/sale to schools and local community
- Complete home or farmstead improvement construction activities
- Conduct general home maintenance
- Construct a hydro ram pump and calculate the efficiency and water delivery rate
- Construct a utility building
- Construct a wind powered generator and show its applications to agriculture
- Construct and sale birdhouses and feeders
- Construct and sale lawn furniture made of PVC.
- Construct compost bins to sell
- Construct concrete projects for the home or farm
- Construct or recondition a welding project (such as a trailer, cooker, etc.) at home or in school provided facilities
- Construct prefabricated wooden fence panels for sale to local hardware, building supply stores
- Construct prototypes of hydraulic systems
- Construct spray rigs for four wheelers
- Constructing and marketing woodworking projects (birdhouses, dog houses, etc.)
- Constructing metal projects

- Contract with local EMCs or Power Companies to remove bolts, wire, etc from old power poles. (Sell copper for recycling.)
- Contract with school system to maintain and service lawn care equipment
- Create a demonstration model that shows proper and improper welding techniques
- Create a teaching model to show how a small gas engine works and sell to FFA chapters
- Cut out and paint lawn figures for sale
- Design, build and sell lawn ornaments
- Electrical repair service
- Install electrical circuits or wiring system at home
- Install plumbing fixtures or plumbing system in your own building
- Lawn mower maintenance service
- Machine and rebuild engine parts
- Making craft items from wood, metal, or concrete to sale at arts and craft shows
- Making personalized signs for sale
- Manage the steel inventory in the Ag shop
- Map fields, weeds, etc. for producers using GPS and GIS
- Operate a lawn mower service and repair business
- Paint agricultural buildings and farm houses
- Placement in a parts store
- Pour concrete forms for machine sheds or other buildings
- Provide a poultry house maintenance preparation business
- Provide custom painted mailboxes and stands
- Provide maintenance for school shop equipment
- Repair and rebuild damaged pallets for businesses
- Research the biggest challenges producers face when adopting new technology
- Research the differences in various styles of tillage equipment
- Research the energy use of different types of lighting systems in farm buildings
- Research the water savings accomplished by new irrigation technologies
- Restore a tractor and sell it or restore a tractor for someone else.
- Run a custom fence building and repair business
- Start a chain saw basic maintenance & service business
- Start a custom spraying service that utilizes GPS
- Start a custom vehicle refurbishing or painting business
- Start a detailing business for cleaning farm equipment on the farm (wash, wax, clean, maintain)
- Start a farm equipment tire disposal business. (Turn old tires into livestock feeders.)
- Start a farm fence maintenance business (cleaning fencerows, repairing)
- Start a farm fencing company for custom work
- Start a pallet manufacturing business
- Start a small engine repair service
- Start an equipment locating business. Match folks with something for sale with folks who want to buy something
- Test the strength of different types of welds
- Wire a home shop, utility room, barn, or tree house
- Wire buildings for lights and receptacles
- Work as a diesel mechanic assistant
- Work as a surveyor assistant
- Work as an agricultural mechanics aide
- Work as an assistant for an auto, truck or tractor mechanic
- Work at a welding operation
- Work for a local electrician
- Work for a plumbing business
- Work for a small engine repair shop overhaul and repair
- Work for an irrigation service company
- Work in a welding shop
- Work on plumbing waste systems, air and water systems
- Work with county soil and water engineers - assist in measuring and engineer design
- Working at a building supply business
- Working with a farm equipment dealer

Animals Systems Career Pathway

Employment in this pathway involves knowledge in the areas of genetics, nutrition, reproduction, growth and development of food and companion animals, inspecting livestock, grading livestock food products, purchasing livestock, sales, and marketing.

Careers associated with Animal Systems

Example SAEs related to Animal Systems

- Assist a horse group that assists handicapped students
- Assist at a horse stable
- Assist at local animal shelter
- Board horses
- Build a backyard poultry research project
- Buy and show a calf at fairs
- Care and incubation of hatching eggs
- Compare weight gain of chicks fed different feed rations
- Conduct a survey of all livestock operations in your area
- Conduct feed trials for growing broiler chickens
- Conduct surveys of wildlife populations
- Contract finish swine
- Coordinate and conduct a horse safety camp
- Create a classroom pet adoption program with elementary schools
- Develop a cow-calf operation
- Develop a small swine operation
- Develop a stocker cattle operation
- Discover the number of pet owners in community and their priority concerns
- Form a cooperative with other students to raise broiler chickens
- Grow catfish for sale to local cafes
- Maintain aquariums for local businesses
- Maintain the school's aquaculture system
- Manage a small aquatics lab
- Manage livestock show and supplies for FFA chapter
- Operate a pay-to-fish business
- Operate a pet sitting service
- Organize and/or run a petting zoo at local fairs or farmers markets
- Participate in a mentorship program with a taxidermist
- Plan and implement a "hands on" livestock field trip
- Produce feeder pigs
- Provide a beehive rental service for farms and gardens
- Provide a deer processing service
- Provide a home animal care service
- Provide a horse training service
- Provide a horseshoeing service
- Provide a kennel cleaning service
- Provide a lost home for homeless pets
- Provide a meat processing service
- Provide a poultry processing service
- Provide equine training services
- Provide fish pond management
- Provide fishing and hiking services for area youth groups and elementary students
- Raise a beef heifer for show
- Raise a dog for show
- Raise a horse for show
- Raise a market hog for show
- Raise a market steer for show
- Raise and sell farm fresh eggs
- Raise and sell purebred dogs
- Raise and train hunting dogs
- Raise breeding sheep for show
- Raise breeding swine for show or breeding
- Raise catfish in cages
- Raise chinchillas, hamsters, gerbils and sell them on the Internet
- Raise dairy goats
- Raise dairy heifers for show
- Raise dairy replacement heifers
- Raise dogs for sale
- Raise fish for the state fish and game department
- Raise fish in an aquaculture system
- Raise fish in cages in a pond or other body of water
- Raise fish in tanks or floating cages - research the rate of growth based on factors such as temp. and amount of feed given
- Raise game birds to sell for the training of bird dogs
- Raise game fish for sale to stock ponds
- Raise indigenous snakes and release into the wild (at approved area) each summer
- Raise llamas
- Raise market goats for show
- Raise market lambs for show
- Raise market pigs
- Raise meat birds (chickens, turkeys, ducks) to the desired weight and sell to consumers
- Raise meat goats
- Raise mice, hamsters, or gerbils
- Raise miniature cattle
- Raise miniature horses

- Raise pheasants or quail to be released into the wild
- Raise poultry for show
- Raise quail or other game birds for flight and meat
- Raise rabbits for pets or meat animals
- Raise replacement heifers
- Raise special breeds of dogs
- Raise tropical fish
- Raise tropical fish in aquariums
- Raise worms, collect and sell to bait stores
- Raise your own livestock or specialty animals
- Research cage layers versus floor layers for egg production
- Research effectiveness of various estrus synchronization hormones
- Research feed trial testing differing swine diets
- Research methods of predator control, methods of trapping
- Research the best diet to help obese pets lose weight
- Run a trapping business
- Staff FFA displays that have farm animals at county and state fairs
- Start a crawfish farm
- Start a cricket ranch
- Start a dog and cat boarding business for vacationing families
- Start a dog exercising business for elderly folks or sick people
- Start a dog obedience school
- Start a dog obedience training service
- Start a dog walking business
- Start a fish bait farm (mealworms, golden grubs, etc.)
- Start a gopher tortoise relocation service for landowners
- Start a honey production business (would work well with above hive rental)
- Start a pet grooming business
- Start a small animal care business
- Start a turtle farm (sale to pet stores and pond owners)
- Start an Easter egg business
- Study the effects of genetic selection in groups of animals over time
- Take care of classroom animals
- Take small animals to nursing homes for visits
- Test the selection of young pigs based on grade and lean yield at slaughter
- Train sporting dogs. (quail, rabbit, and retriever dogs)
- Volunteer to assist with a livestock show or county fair
- Work as a beef feedlot assistant
- Work as a veterinarian assistant
- Work as a wildlife outfitter or guide
- Work at a dog kennel
- Work at a horse operation or stables
- Work at a pet store
- Work at a poultry processing operation
- Work at a university research lab caring for small animals
- Work at a veterinary hospital
- Work at livestock farms or a ranch
- Work at pet shop
- Work at the local livestock auction barn
- Work for a pet sitting service
- Work for a predator control service
- Work for a rodeo company caring for animals and assisting with rodeos
- Work for the state game and fish department
- Work in the egg industry – packaging and distribution
- Work in the grocery store meats department
- Work on a beef cattle operation
- Work on a dairy farm or heifer raising farm
- Work on a dairy operation
- Work on a poultry operation
- Work on a sheep operation
- Work on a swine operation
- Work on an exotic animal farm

Plant Systems Career Pathway

Employment in this pathway involves ways to improve the nutritional and aesthetic value of plants and quality of seeds.

Careers associated with Plant Systems

Agronomist, Entomologist, Plant Scientist, Golf Course Superintendent, Landscape Architect

Example SAEs related to Plant Systems

- Adopt a community building for beautification
- Adopt an area of school campus for beautification
- Build and maintain the compost units at the school
- Collect and laminate plants from a nursery landscape CDE at various stages of growth
- Collect and sale dry/preserved native plant materials (acorns, leaves, wiregrass); especially for floral design retail/wholesale
- Collect, press, mount and identify plants that are growing on campus
- Complete a report on 10 food plants that includes origin, uses and cultivation practices
- Conduct a plant growth and mineral deficiency experiment
- Conduct a plant growth and physiology experiment in school Agriscience lab
- Conduct a supervised control burn and assess plant growth in the area
- Conduct timber cruise and mark timber to be thinned
- Construct a garden arbor
- Construct backyard water gardens
- Container gardening ornamental plants
- Container gardening vegetables
- Create a brochure about common houseplant diseases and how to take care of them
- Create and market custom floral designs
- Develop a business making dried arrangements to sell
- Develop a park on public property
- Develop a test plot for various types of crops
- Discover the best types of artificial lights for plant growth
- Do a garden projection for school land and have it mapped out four years in advance
- Entrepreneurship in floral design
- Establish a community roadside wildflower planting
- Garden plots at home or at school; produce crops to market
- Grow and sale mushrooms
- Grow and sell plants through the high school greenhouse
- Grow and sell produce crops
- Grow and sell the red worms used to produce compost
- Grow crops with different mechanical/chemical applications, fertilizer, growth regulator, etc.
- Observe/report results
- Grow flowers for sale at a local farmer's market.
- Grow greenhouse plants on rented school greenhouse/coldframe space
- Grow herbs
- Grow lirioppe for sale
- Grow organic cut flowers for farmer's market
- Grow organic vegetables for a local café
- Grow, harvest and can or preserve fruits and vegetables
- Horticulture therapy
- Indoor plant rentals and care service for businesses and offices
- Landscape maintenance
- Landscape pruning enterprise
- Native plant materials
- Offer a shrub care service (pruning, trimming and cutting back shrubs, fertilization)
- Organic Vegetable Production
- Plan plant-related activities and laboratories for your class
- Plant and maintain a research plot on different types of turf grasses
- Plant raised beds and monitor the growth of plants
- Produce daylilies
- Produce farm crops (at home or school provided facilities)
- Produce forage crops (at home or school provided facilities)
- Produce fruit crops (at home or school provided facilities)
- Produce greenhouse crop (at home or school provided facilities)
- Produce perennials from seed
- Produce turf grass (at home or school provided facilities)
- Produce vegetables for decoration, Indian corn, mini pumpkins, gourds, etc.
- Produce watermelons
- Propagate and market shrubs
- Provide a fruit tree pruning service
- Provide a mulching service for urban gardeners.
- Provide forestry walk-thru tours for elementary students
- Provide landscaping materials for local businesses (Pine straw and rocks.)

- Provide services to fertilize lawns, till garden spots, prune trees, etc.
- Raise a trial garden plot on school grounds (similar to UGA); seed companies may donate seed/plugs
- Raise and sell pumpkins
- Raise and sell strawberries
- Raise Christmas trees
- Raise tomato seedlings and replant into one-gallon pots to sell
- Rent houseplants to homeowners. (care for plants, change plants weekly)
- Rent indoor plants to teachers in your school
- Rent land from a neighbor and grow soybeans
- Rent-A-Plant -- rent plants for wedding, banquets, parties (ferns and tropicals)
- Research plant propagation techniques
- Research project on how light intensity affects plant growth
- Research project on how light quality affects plant growth
- Research the best turf grass varieties for your area
- Research the effect of various planting times on yields of green beans
- Research the effectiveness of GM crops
- Scout cotton or peanuts for producers
- Sell and install water gardens
- Start a commercial flower upkeep business
- Change hanging baskets, potted plants, and window boxes for business.
- Start a floral design business by creating table centerpieces for sale at farmers markets, grocery stores, and vegetable stands
- Start a garden photography business
- Start a hydroponics vegetable business
- Start a lawn irrigation installation business
- Start a renovating houseplant business
- Start a turf grass establishment business (seeding, sodding, hydroseeding, etc.)
- Start a vegetable transplant seedling business
- Start your own forage testing service
- Start your own lawn mowing business
- Start your own pruning business
- Start your own soil sampling business
- Start your own spraying business
- Study effects of herbicide type and varying concentrations
- Take care of flower beds/gardens on school property
- Take pictures and make a CD for plant or insect identification
- Test drought tolerance of different types of watermelons
- Test forage samples under various conditions to determine feed values
- Test organic versus inorganic fertilizers on plant development
- Use the school lab to manage small vegetable crop variety plots
- Volunteer to work with landowners to improve their forest lots
- Work as a range consultant
- Work at a florist
- Work at a garden center
- Work at a golf course
- Work at a nursery
- Work at an area garden center
- Work at the grain elevator during the summer
- Work for a grain farmer
- Work for a lawn and landscape care business
- Work for a local flower shop doing design, plant care, deliveries, etc.
- Work for a sprinkler installation business
- Work for an agronomy service and collect soil samples
- Work in a nursery business
- Work in an orchard
- Work in and monitor the school forest
- Work on turf farm
- Work with county soil scientist to map soils

Food Products and Processing Systems Career Pathway

Employment in this pathway focuses on discovering food sources and developing ways to process, preserve, package or store food. In addition, they create new products and inspect food processing to ensure food safety.

Careers associated with Products and Processing Systems

Biochemists, Food Broker or Engineer, Food Science Technician, Quality Assurance Specialists

Example SAEs related to Food Products and Processing Systems

- Ask farmers for permission to glean fields for food to give to homeless shelters
- Assist at an herb farm
- Assist with produce selection at a grocery store
- Collect wild mushrooms and sell to local vendors
- Conduct food science experiments
- Deliver sweet corn to customers for a local grower
- Grow vegetables to give to local food pantry
- Help at a local fruit/vegetable stand
- Make jams and jellies for sale at a farmer's market
- Process and sell specialty products--bison, wild flowers, ostrich
- Process wild game for jerky, etc.
- Raise trout and sell to local restaurants
- Research genetic changes in various vegetables
- Research genetic crossings in winter squash
- Research incidents of food borne illnesses in a community
- Research the development and use of edible soybeans
- Research the environmental effects on milk
- Research why new food products fail to sell
- Sell gourmet popcorn products
- Sell picked vegetables
- Start a service to grow gardens for the elderly
- Start and manage a farmer's produce market in town
- Study the impact of various styles of labels on people's perception of the food product
- Test ideas for new food products
- Work at a cranberry farm
- Work at a meat production plant
- Work at a produce facility that repackages and sells produce
- Work at a vegetable or fruit canning factory
- Work at local bakery
- Work for an agricultural seed cleaning and bagging company
- Work for and/or operate a wild bird processing service
- Work in a deli or bakery at a grocery store
- Work to establish a community vegetable garden

Environmental Service Systems Career Pathway

Employment in this pathway involves pollution control, recycling, waste disposal, public health, hazardous waste management studies, and environmental research projects.

Careers associated with Environmental Service Systems

Environmental Engineer, Hazardous Materials Handler, Health and Safety Sanitation, Toxicologists

Example SAEs associated with Environmental Service Systems

- Assist community watershed action groups
- Assist landowners with installation of soil conservation practices
- Assist local agencies with data collection for watersheds
- Collect water samples for local or state agencies
- Conduct a local water quality study
- Conduct a tour of area farms and ranches that practice effective pollution control
- Conduct workshops for homeowners on composting
- Create service to remove algae from area lakes and fishing ponds
- Develop and implement a farm safety class for elementary school students
- Develop marshlands for game
- Develop plan to manage school food waste
- Establish green belts along streams on your farm
- Lead farm safety program for elementary students
- Monitor dust levels in air at various sites and various times throughout year
- Monitor local air quality; record and report
- Monitor pollen counts in an area by working with labs and weather stations
- Own and operate a water systems farm drainage (tiling) company
- Put together a town safety package---mark all signs, fire hydrants and water drains
- Research area pollution concerns
- Research methods for preventing common accidents in agriculture dept. laboratory
- Research rate of accidents on area farms and compare to national averages
- Research the effects of livestock feed on waste issues
- Research the effects of various cover crops on

- erosion
- Sell radon detectors and collect samples
- Sell shop safety equipment door to door
- Start a leaf collection service in the fall and sell mulch in the spring
- Start a manure removal business for acreage owners
- Start a service to collect used pesticide containers
- Start a water sample collecting service
- Start a wood chipping service for people and/or sell the chips as mulch
- Take part in a mentorship program with the local

- soil and water conservation district
- Volunteer to monitor water quality for community pond
- Work as a trencher for waste water lagoons
- Work as a water quality lab assistant
- Work at a fishery monitoring water quality
- Work for a company that installs plastic drainage tile farm fields
- Work for a testing laboratory
- Work for the natural resource and conservation district

Natural Resources Systems Career Pathway

Employment in this pathway work to develop, maintain and manage forest and natural environment, develop and protect natural resources, and conservation of water and other natural resources.

Careers associated with Natural Resources Systems

Conservation Officer, Water Quality Manager, Forestry Scientists Fisheries Scientist, Wildlife Manager

Example SAEs associated with Natural Resources Systems

- Adopt a local stream to monitor water quality
- Assist a timber stand improvement specialist
- Assist Christmas tree farmers with planting and trimming
- Assist local city management with summer programs as a guide
- Bale and market pine straw
- Build bat, bird, duck, squirrel houses for use or sale
- Buy unusable lumber from builder's supply and building sites; grind up or chip for mulch to sell
- Clean and prune orchards
- Collect green pine cones (for seeds in the fall)
- Collect used Christmas trees and yard trimmings Grind, compost, bag and sale as organic fertilizer
- Collect water run-off from school parking lot and analyze for various pollution indicators
- Collect, mount, and identify insects found on school campus
- Collect/market natural supplies (pine cones, acorns, nuts, corn shucks, etc.) to sell to craft stores
- Conduct a research project on how to prevent deer damage to a home garden
- Conduct a water quality study on area lakes or streams
- Conduct endangered plant surveys for landowners
- Construct and sell game feeders
- Construct deer stands for sale. (Portable and stationary)
- Construct duck nesting boxes for sale to landowners
- Construct turtle traps for pond owners (Use this in conjunction with turtle farm as a source of breeding stock.)
- Container Pine Seedling Production
- Contract with a tree removal service to cut firewood and remove fallen trees
- Contract with landowners to plant food plots for wildlife
- Contract with local timber companies and landowners to maintain boundary lines by painting and chopping
- Create a brochure on creating wildlife habitat in backyards to share with community
- Create activities or laboratories for a natural resources class
- Create and sell soil survey maps for area farmers and land owners
- Cut and sell firewood provided free by national forests and state and local parks
- Cut fire wood and sell at local stores
- Cutting and/or marketing firewood
- Develop a backyard bird habitat
- Develop a backyard wildlife habitat
- Develop a forest/wildlife management plan for a

local landowner

- Develop a schoolyard wildlife habitat
- Develop and/or maintain a wildlife food plot on private or public land
- Develop and/or maintain wetland area on private or public land
- Develop habitat trails for walking or hiking
- Develop hunting ranges; set up indoor/outdoor ranges for bow competitions
- Discover the native plants for your ecological area and determine how prevalent they are currently
- Grow longleaf pine seedlings
- Habitat construction, make brush piles, plant wildlife habitat
- Maintain and supervise the school prairie or grounds
- Measure land for the local FSA office
- Measure timber on school forestry plot; determine volume and establish a management plan
- Monitor success rate of bluebird houses
- Operate a trapping business
- Organize and participate in a wildlife field day
- Plan and develop a school nature trail
- Plan and develop an outdoor classroom
- Plant a butterfly garden at school
- Process and deliver seedlings to elementary school students
- Provide a debris removal service along rivers and streams; sell driftwood and other items to consumers
- Provide a pond fertilization and testing service
- Provide a soil sampling service for farms and lawns
- Provide custom dove shoots or quail hunts
- Provide non-game wildlife management
- Provide outdoor education material at camps
- Purchase bulk pine bark from sawmill, bag and resale
- Purchase seedlings from GA Forestry Commission and pot and grow out to sell
- Raise Christmas trees and sell at Christmas time
- Raise fish for the state fish and game department
- Raise mallard or wood ducks for sale to pond owners
- Raise popular game birds; sell them for meat and as taxidermy products
- Raise wild game fowl for sale to local hunters
- Remove lightning strike trees (insect damaged, mechanical injuries) for landowners
- Research best practices for improving fish habitat in local ponds
- Research impact of using ATVs on public lands
- Research pines planted on tight spacing, water and fertilize, and compare with regular spaced planted pines
- Research the benefits of using GIS mapping for natural resources
- Research the effectiveness of habitat restoration projects in your community
- Research the impact of various insects on woodlot management
- Serve as hunting guide
- Soil conservation project on private or public land
- Start a bullfrog farm. (Sell fresh frog legs to local restaurants.)
- Start a custom forest herbicide application crew (Must have forest commercial pesticide license.)
- Start a fish fingerling nursery. (Catfish, trout, bream)
- Start a fish pond and teach small children and adults to fish
- Start a forest tree planting business
- Start an ornamental tree care service
- Start a Red Cockaded Woodpecker relocation service
- Start a rock store; sell for landscaping purposes. (Gravel, pebbles, stones)
- Start a small Christmas tree plot
- Start a wildlife food plot and native plant enhancement business for local landowners and hunting clubs
- Start an equipment trailer fabrication business
- Stock and maintain fish populations in ponds
- Study effect of fertilizer run-off into a stream or pond
- Study effect of manure run-off into a stream or pond
- Study soil profiles from multiple locations in your community and develop a soil map
- Study the effects of excessive lawn chemicals on wildlife
- Trap nuisance animals
- Volunteer to assist at campgrounds with cleanup and maintenance
- Woodlot management and improvement including firewood, habitat, etc.
- Work at a bait shop
- Work at a saw mill

- Work for a landowner to plant habitat for wild game
- Work for a nature center
- Work for a park service during the summer
- Work for parks and recreation in maintenance
- Work for the fish and game department
- Work in the logging business

Biotechnology Career Pathway

Employment in this pathway allows you to unleash your inner scientist utilizing biotechnology in agriculture to enhance plants, animals, and microorganisms. Professionals in this field often have a strong interest and background in how science can modify an organism's genetic composition, also known as genetic engineering. Biotechnology assists in making plants more nutritious to eat while enabling fish to grow twice as fast. They even use biotechnology to solve global problems.

Careers associated with Biotechnology Systems

Geneticist, Microbiologists, Biochemist, Lab Technician, Animal Scientists, Plant Scientist

Example SAEs associated with Biotechnology systems

- Analyze the impact major regulatory issues have on public acceptance of biotechnology in agriculture
- Analyze the implications of biotech, laws and public perceptions on biotechnology applications in agriculture
- Apply biotechnology principles, techniques, and processes to enhance plant and animal care production
- Apply biotechnology techniques to enhance the production of food by using microorganisms and enzymes
- Conduct studies to evaluate treatment of a waste product using a genetically engineered organism
- Conduct studies to track the movement of transgenes in the environment
- Design a bioremediation project including plans to evaluate effectiveness of the effort
- Design a study to examine public perceptions of scientific arguments regarding biotechnology in agriculture
- Design and conduct experiments to evaluate an existing transgenic eukaryote
- Evaluate factors that influence gene expression
- Evaluate the biochemical properties of proteins to explain their function and predict potential uses
- Evaluate the impact of modified organisms on the natural environment
- Evaluate the scope and implications of regulatory agencies on biotechnology applications in agriculture
- Examine and perform scientific procedures using microbes, DNA, RNA and proteins in a laboratory
- Examine and synthesize the need for biofuels (cellulosic bioenergy, etc.).
- Implement standard operating procedures for safe handling of biological/chemical materials in a lab
- Investigate the relationship between past, current and emerging applications of biotechnology in agriculture
- Monitor and evaluate processes used in the synthesis of a molecule
- Operate advanced laboratory equipment and measurement devices
- Perform ongoing maintenance of laboratory equipment according to standard operating procedures
- Perform plant - breeding techniques (plant tissue culture, etc.)
- Perform sterilization techniques for equipment in a laboratory using standard operating procedures
- Produce alcohol/biodiesel/methane and co-products from biomass
- Research and categorize the types of pharmaceuticals developed for animals and humans through biotechnology
- Research factors and data regulatory agencies use to evaluate the risks new biotechnology applications pose
- Study the technologies used to create biofuels from biomass and weigh the pros/cons of each method
- Transform plant or animal cells by performing a cellular transformation
- Use antibodies to detect and quantify antigens by conducting an Enzyme-Linked Immunosorbent Assay (ELISA)