

Santa Rosa Junior College

Program Resource Planning Process

Agriculture 2014

1.1a Mission

The mission of the Santa Rosa Junior College Agriculture/Natural Resources Department is to increase the knowledge, improve the skills, and enhance the lives of those served by its programs, preparing leaders in agriculture, food systems, and natural resources who are equipped to address the diverse food, fiber and fuel needs of society. The department has a diverse program offering of approximately 204 courses that include curriculum in Sustainable Agriculture, Environmental Conservation, Wine Studies, Viticulture, Agribusiness, Ag Science, Environmental Horticulture, Veterinary Technician, Animal Science, and Equine Science. Last year these programs served approximately 3,759 students, the largest and most diversified community college Agriculture/Natural Resources Department in California.

1.1b Mission Alignment

The Santa Rosa Junior College Agriculture and Natural Resources Department's mission matches the most fundamental goal of the college: "to promote student learning throughout our diverse communities by increasing the knowledge, improving the skills and enhancing the lives of those who participate in our programs and enroll in our courses." The Santa Rosa Junior College Agriculture and Natural Resources Department's mission matches the District's responsibility to provide lower division academic education, to support transfer to four-year institutions, and career and technical education, to support economic development and job growth. In fulfilling the Ag/NR Department mission, we are committed to the following district objectives:

1. Serve the educational needs of our students and our community through a diversity of programs and courses that maintain high academic standards and develop its respect for learning in all of our students.
2. Offering courses and programs which reflect academic excellence and integrity and which serve the variety of needs, career pathways, and abilities of our students.
3. Identifying student learning outcomes for courses, programs, certificates, and degrees; assessing student achievement of those outcomes; and using those assessment results to improve effectiveness.
4. Responding to economic, demographic, and technological changes through educational program development and staff development.
5. Helping students succeed in meeting their educational goals by providing comprehensive instructional and student support services.
6. Challenging students to participate fully in the learning process by teaching students to be responsible for their academic success.

7. Preparing our students for participation as citizens at the local, national and global levels.
8. Promoting awareness of and maintaining sensitivity to ethnic, cultural and gender diversity within our student body, faculty, staff, administration and course offerings.
9. Promoting open access through actively eliminating barriers to a college education and services.
10. Contributing to the cultural life of our community by presenting enrichment opportunities to our students and community members.
11. Attracting and retaining faculty and staff who are highly qualified, knowledgeable and current in their fields.
12. Practicing responsible participatory governance within the institution through processes that are inclusive and respectful of all participants and in which information and decision-making are shared.
13. Maintaining the stability of our institution by exercising our public responsibility for sound resource development and use in order to meet our commitments to the citizens of the District.
14. Promoting and maintaining a safe learning and working environment.
15. Reviewing our mission statement periodically with participation by students, faculty, staff, and administration.

The Santa Rosa Junior College Agriculture and Natural Resource Department's mission is also consistent with the District's 2011-2012 initiatives/goals:

I. Re-Engineering

In 2010-2012 the department participated in the following re-engineering activities: an Ag/NR department AA III position was reduced from 100% to 80%. Additionally, in 2012-2013 the department agreed to reduce this position from an AA III to AA II as a district cost saving measure. Unfortunately this reduction is still up for debate and accordingly has resulted in the position being only filled by an STNC over the 2012-2013 school year. At Shone Farm a Livestock Tech I position that supports instruction and Shone Farm operations was increased from 60% to 100%, resulting in District cost savings and redirecting staffing to critically needed areas. Shone Farm's AAll was also increased from 60% to 80%. Additionally, in 2011 Welding was reengineered to the Industrial Trade Tech Department. This move has helped to improve the ability of the department chair to realistically fulfill duties, as the release time granted (78%) is now under the 80% maximum allotted.

II. Multi-Campus Coordination

The Ag/NR Department offers courses at Petaluma, Santa Rosa, and Shone Farm. Faculty, staff and management work diligently to ensure there is effective communication amongst the various sites. Coordination efforts are implemented via a master calendar, monthly meetings, and phone/email communication as needed.

V. Student Learning Outcomes and Assessment

Course level Student Learning Outcomes (SLOs) were developed for all 204 courses. Program Learning Outcomes and MAPs have been developed and approved for all departmental certificates and associate degrees.

Learning Assessment Projects (LAPS) have been completed for 33 courses. As of Spring 2013, an additional 9 LAPS have been identified and are expected for completion in May 2013 (For additional information regarding specific courses please see PRPP Section 4).

VII. Enrollment Management & Retention

Due to the district wide mandates to *more effectively target courses to student needs* with the objective of *increasing student enrollment and student success*, the Ag/NR Department has worked diligently to assist the college in assuring more effective enrollment and retention of students. Unfortunately, the reduction in FTEF is particularly difficult for Ag/NR occupational programs that don't offer multiple sections of courses. Accordingly, to respond to District needs, the each program in the department has implemented course rotation sequences, which were previously unnecessary. Because of this newly implemented procedural process, the Ag/NR Department is closely monitoring the results of district budget reductions on enrollment. Further reductions on the department will most likely result in the inability of students to complete their certificates/degrees in a 2 year process.

D. Improve K-16 articulation.

The SRJC Agriculture/Natural Resources Department has continued with major curriculum work in each of its program areas to meet the California Community College Agriculture Core Course Model Programs. SRJC Agriculture & Natural Resources program coordinators and instructors meet annually with community college, CSU, and UC instructors to collaborate on curriculum within each discipline. These courses follow a statewide articulation numbering system with CC, CSU, and UC agriculture courses statewide. Some of these courses also satisfy General Education requirements and UC/CSU numbered status. All Ag/NR courses went through major updates and revision (particularly in regards to "greening" the curriculum), with the addition of Student Learning Outcomes (SLOs). Many Agriculture and Natural Resources Programs have a transfer track to CSU and UC agriculture majors. Additionally, the certificate programs continue to be enhanced to meet the local employer and industry needs in the community. Program advisory committees were utilized for the review and approval process in the development of the Ag/NR Department master plan. During the California Agricultural Teacher Association quarterly meetings, Tech Prep and/or career pathways are discussed with local high schools and the Agriculture and Natural Resources Department. In 2012, the department in coordination with the SRJC Manager of School Initiatives & Career Pathway Development looked into articulating AGRI 20-Plant Science with local highschools. Unfortunately after review of the high school course outlines, it was determined that the high school courses were not equivalent to SRJC's course offering. Due to the lecture/laboratory format at SRJC and the need to maintain the caliber of instruction required to ensure our articulation agreement with UC and CSUs, it is unlikely articulation will be achieved.

E. Develop an annual strategic course offerings plan that meets student priority needs and achieves optimal enrollment funding.

Due to the district wide mandates, the department has implemented course rotation sequences, which were previously unnecessary. Program coordinators monitor their enrollment and retention, and update their course rotation sequences accordingly on an annual basis.

VIII. Integrated Environmental Planning

The Shone Farm serves primarily as an outdoor laboratory site for Agriculture and Natural Resource classes. Nearly every student has the opportunity to learn through participation in the instructional activities of Shone Farm during his or her tenure at SRJC - this is about 33% of the total FTES reported for all of the Ag/NR courses, a number which has steadily grown year after year, despite the reduction in course offerings. It is also an opportunity for students to learn about sustainable farming practices and how the different ag disciplines are integrated in an outdoor lab setting. Moreover, students not only learn skills related to their discipline, but also how to make important business management decisions through sales of farm products off the 365 acres of Shone Farm that includes:

- 70 acres Premium Wine Grapes (chardonnay, sauvignon blanc, syrah, merlot, pinot noir, pinot blanc)
- 120 acres of forest (Douglas Fir, Redwood, Monterey Pine)
- 50 acres of multi use land
- 100 acres of pasture land (35 beef cattle, 35 ewes and ~20 horses annually)
- 14 acre Sustainable Agriculture Unit (market garden/crop production area, greenhouse, 2 acres organic apples and 2 acres of organic olives).

Discussions with faculty and staff have led to a future vision for the farm to become a demonstration site for emerging technologies related to environmental education and sustainable agriculture.

1.1c Description

1. Curriculum

The SRJC Agriculture/Natural Resources Department teaches credit courses in Animal Science, Equine Science, Veterinary Technology, Viticulture, Agribusiness, Sustainable Agriculture, Wine Studies, Environmental Horticulture, Natural Resources, and Recreation Management. During the 2013-14 school year the Ag/NR Department served 3,000 students, and showed a steady increase from the previous year.

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and UC/CSU numbered status. All courses in the department went through significant revisions (particularly in "greening" the curriculum) with the addition of Student Learning Outcomes (SLOs). New courses were also recently developed in Sustainable Agriculture. Many Agriculture and Natural Resources Programs have a transfer tract to CSU and UC agriculture majors.

The majors and certificate programs were reviewed/revised to meet the local employer and industry needs in the community. Program advisory committees were utilized for the review and approval process.

2. Facilities

Shone Farm

The Shone Farm totals 365 acres and includes:

- 80 acres Premium Wine Grapes (Chardonnay, Sauvignon blanc, Syrah, and Pinot noir)
- 120 acres forest (Douglas Fir, Redwood, Monterey Pine)
- 50 acres of multi use land
- 100 acres of pasture land (35 beef cattle, 35 ewes and 20 horses annually)
- 14 acre Sustainable Agriculture Unit (market garden, crop production area, greenhouse, 2 acre organic apples and 2 acres of organic olives)

The Agriculture/Natural Resources Department's 365-acre self-sustaining Shone Farm, has been integral to the laboratory "learn by doing" philosophy of the instructional program of the department. All of the science based instructional programs- animal science, general agriculture, equine science, veterinary technician, sustainable agriculture, viticulture, wine studies, and natural resources use the diverse farm entities extensively within their programs. The Agribusiness Program uses the farm with the Agriculture Leadership class' Agriculture Ambassador Program.

Shone Farm has a variety of areas for students of SRJC to gain knowledge, training and the skill needed today in the following fields of study:

- Viticulture - Projects include pruning, vine training, irrigation management, pest & disease control, soil evaluations, canopy management, vine balance assessment, crop projection and budget development.
- Animal & Equine Science – Shone Farm is home to herds of cattle, sheep and horses, and on occasion, as student enterprise projects, flocks of laying hens and broiler birds. Students are actively involved in grooming, lambing, calving, breeding, feeding, marketing, record keeping and maintenance practices.
- Veterinary Technician - Utilizing the livestock resources, veterinary technician students are involved in vaccinating, parasite control, first aid, and general health care practices.

- Sustainable Ag – Crop work includes propagation of plants, planting, weeding, fertilizing, irrigation, composting, harvesting, packing, and marketing and distribution of products.
- Natural Resource Management– Students map and stake out boundaries and trails, work on erosion control, maintenance of new and existing trails, and preservation of the natural forest environment, including fuel reduction.

Students can be a part of the Shone Farm crew by participating in one of the following programs:

- Student Resident: Live at Shone Farm in exchange for 12 hours of work/week.
- Work Study – Aimed at those students who already have some prior knowledge of the area they are to work. These students can earn credit as well as income for their work on the farm.
- Student Employee: Work 6 - 20 hours/week for pay.
- Intern/Special Studies: Earn college credits for time spent on the Farm. Credits awarded depend on amount and quality of work.
- Enterprise Project: Work on an income generating project while allowing students to further their education.

In addition to Shone Farm's outdoor environment, students gain knowledge, training and skills necessary to be successful in their chosen career path by using the additional Shone Farm facilities:

- The Belden Center provides shop space, offices, dorm room, kitchen and a meeting room
- Richard L. Thomas Classroom provides a high tech teaching facility.
- Warren G. Dutton Jr., Agriculture Pavilion, a multi-purpose educational facility houses an indoor arena, bonded wine laboratory, commercial kitchen, processing facilities, dorm room and educational meeting rooms.
- The Porter Barn includes a multitude of feeding, care, & restraint facilities for the Animal Science program.
- The Equine Unit which consists of the Russ Gleason Memorial Arena, 18 stalls mare motel, round pen, G.K Hardt stable, and newly installed hot walker. All of these facilities support equine classes, clinics, workshops, and agricultural field days helping to guide students as they pursue their education and career skills training. The Equine Science Unit at Shone Farm is also a valuable asset to meet the needs of an extensive population of equine enthusiast in Sonoma County, which has the second largest horse population in the state of California. The facility is available for use to serve as a location for clinics, competitions and other functions.

Historically in the past there had also been community usage of Shone Farm for Community Education courses. The Community Education program (Fees range from \$45 to \$150) had included courses on trailer safety, bits and saddle fit, natural horsemanship, horse rescue techniques, trail riding, communicating with your horse, horse handling, horsemanship and and equine acupuncture and massage. Due to the economic

downturn and the cost prohibitive overhead charged by the Community Education program, these offerings have been curtailed. Utilization of Shone Farm has also increased with rental of the Dutton Pavilion to community organizations for such events as the Guys Can Cook Too dinner (held by the Rotary Club of Sebastopol Sunrise,) the Leadership Santa Rosa event held by the Santa Rosa Chamber of Commerce, Slow Food Fundraising dinner held by the Slow Food Russian River Organization, and the Farrier Certification testing held by the Western States Farrier Association.

Extensive time has been spent developing an inventory of Shone Farm equipment and tack. Additionally, due to the extensive community support of contributions of equipment, livestock, and labor, significant time has been invested by faculty in developing contractual agreements for potential donations. Legal documents have also been developed by faculty to address stable use, premise use agreements, rental agreement policies, code of conduct agreements, and fee schedules.

During 2009-2011, a Master Plan was developed for the department, including a Business Strategy for Shone Farm. The Master Plan is intended to address various elements: staffing, facilities, resources, and utilization of the farm by the instructional program. The Business Strategy also outlines some short-term opportunities for revenue enhancement and some longer-term strategies for realizing the farm's potential.

Computer Laboratory

The computer laboratory in room 2060 of Lark Hall has historically served students both in course offerings and in "open laboratory" usage. Used primarily for Agribusiness courses, courses in GIS, integrated pest management, animal science, horticulture, natural resources, equine science and other agriculture courses are now also heavily using this classroom. The heavy usage has impacted the department both in staffing and supply expenses, for the department budget has not been increased to support these additional costs. With adequate staffing the Lark Hall computer lab could be of service to the whole campus as a resource as an "open laboratory".

Greenhouse/Nursery Compound

The greenhouse/nursery compound on campus has been in disrepair and neglect after 34 years of operation. The unit still serves over 700 students yearly in a myriad of Environmental Horticultural, Agriculture, Sustainable Agriculture and Viticulture classes, plant sale production, and supporting campus by growing oak seedlings and a limited number of plants for SRJC Grounds. The unit has not had any significant capital improvements to the facility since the unit was built with the construction of the Lark Hall facility. Due to the delapidated conditions of this unit, serious safety issues have arisen, including student trip and slip hazards, structural collapse and other hazards associated with a glass enclosed compound. The compound is ill suited for the commercial cultural practices associated with the nursery operations such as planting, thinning, transplanting, potting, and other operations. The unit is in need of equipment associated with the nursery operations as well as the landscaping operations

conducted on campus. The unit needs to conform with current industry standards with energy efficiency and materials and conservation processes. Additionally, there is a major need for the unit to have greenhouse/nursery staffing for the full year. The current Environmental Horticulture instructors' time is being taxed with supervision of student part-time employees of the unit. The Environmental Horticulture advisory committee feels that improvement of the facilities and staffing of this unit is essential for the college to maintain the standards and reputation of the SRJC Environmental Horticulture program. In order to raise funds for a the program, the Environmental Horticulture program coordinator, in conjunction with students from the classes, have implemented a plant sales program, selling landscape shrubs and perennials, as well as greenhouse foliage and potted color. Plants are also being marketed in the SRJC bookstore. Initial plans have been developed to build a new state-of-the art horticulture/nursery facility, which would meet the needs of horticulture students for the next several decades.

Laboratory Classrooms

Approximately 3,759 students in the department, and seven full time instructors and approximately 50 adjunct instructors utilize the laboratory classrooms in the Lark Hall complex. The classrooms are used from early in the morning to late at night with classes ranging from Soils to Vet Practices to Sensory Evaluation of Wines. The classrooms surround a "Central Supply" area which houses laboratory supplies and equipment for the instructors. The 1979 design of the complex was one of the best-designed occupational learning facilities in the state of California. But, as teaching styles change over thirty four years, facilities should change to accommodate innovations in instruction. The twenty five year old classrooms need major remodeling to include movable workstations and seating, replacement of chalkboards, and enhanced lighting. A new laboratory classroom has been added to the facilities request to address student growth requirements in the Lark classroom area.

3. Student Organizations

The Santa Rosa Junior College Agriculture/Natural Resources Department has one of the strongest student leadership organizations in California, the Agriculture Ambassadors, which is the oldest and largest club on campus with a annual membership of approximately 50 students. The purpose of the SRJC Ag Ambassadors is to: foster, promote, maintain, and support students in agriculture; assist and guide them in becoming more responsible, involved, and knowledgeable in the area of agriculture; enrich students' experiences as part of the total college experience; promote service to the college and the community; and to emphasize the development of leadership, character, and judgment. The students represent a diversity of ag disciplines, interested in improving their leadership skills and participating in community activities. They attend a multitude of leadership conferences in collaboration with the Collegiate Agriculture Leaders Organization (CAL). The collegiate agriculture leaders compete statewide in collegiate contests such as college bowl, prepared and extemporaneous speaking, sales, Farm Bureau discussion meet and other leadership oriented competitions. The SRJC Agriculture Ambassadors' major activity focus is agriculture literacy, which consists of outreach programs to high

school and elementary schools in the North Coast Counties. Additionally, the Ag Ambassadors benefit SRJC students at large by participating in the SRJC Club Days, Career Fair, Shone Farm Fall Open House, Thank a Farmer Feed to provide 800 free meals to the campus community, and the Ag/NR Department fundraising for Agstravaganza. Ag Ambassadors also participate in numerous community outreach events, including the Farm Bureau Crab Feed, Sonoma County Farm Bureau Ag Days, Napa County Ag Days, Sonoma County Harvest Fair, Sonoma County FFA Speaking Contest, North Coast Region Best Informed Greenhand Contest, State FFA Convention Career Fair, Young Farmers and Ranchers, 4H Chicken-Q, and the Sonoma County Livestock Judging Clinic and Contest.

In 2010 a new Agriculture/Natural Resources student organization emerged, Students for Sustainable Communities. This club is aimed at exploring how to make our campus community align with environmental conservation. The club works to promote greening our campus, become leaders in sustainable education, and create an all around more sustainable community. One of their first projects was a pilot project that took part in greening the new Bertolini building, which opened Spring semester 2010. Efforts will help make the new building become a guiding example for the campus and beyond. Some of the basic ideas are "to make sure the building is using less, recycling and composting as much as possible, and wasting as little as possible.

In 2011, another new Agriculture/Natural Resources student organization emerged, The Sustainable Agriculture Club. The mission of SRJC's Sustainable Agriculture club is to support the learning and implementation of sustainable agricultural practices among the community, provide an academic resource for students, and to promote SRJC's Sustainable Agriculture program.

4. Faculty Professional Development and Community Involvement

The department also maintains a high professional profile in industry and community associations. In almost all of the industry program areas, you will see a Santa Rosa Junior College Agriculture/Natural Resources faculty member actively involved with that industry. From the Sonoma County Harvest Fair Board to The Russian River Grape Growers, Santa Rosa Junior College Ag/NR faculty and staff are dedicated to serving the community they represent.

Professional organizations which our instructors belong to include:

- Australian Society for Viticulture and Oenology
- California Association of Pest Control Advisors
- Board Member, Sonoma County Vineyard Technical Group
- Sierra Club
- National Wildlife Federation
- National Association for Interpreters
- Park Rangers Association of California
- American Society of Animal Science
- Sonoma County Farm Bureau
- American Society for Enology and Viticulture
- Sonoma County Winegrape Commission
- Russian River Valley Winegrowers Assoc
- Association of Veterinary Technician Educators

- American Veterinary Medical Association
- Redwood Empire Veterinary medical Association
- Association of Reptilian and Amphibian Veterinarians
- Redwood Empire Veterinary Technician Association
- California Agricultural Teachers' Association
- Sonoma County Woolgrowers Association
- Sonoma Marin Cattlewomen
- Sonoma County Farm Trails, Board Member
- Community Alliance with Family Farmers
- American Horticultural Society
- California Association of Nursery & Garden Centers
- California Landscape Contractors Association
- International Plant Propagators Association
- Association of Professional Landscape Designers
- Wildlife Society - Western Section
- Petaluma Wildlife Museum - Board Members

Departmentally individuals participate in a large number of local community events, including the:

- Sonoma County Farm Bureau Crab Feed
- Sonoma County Fair Solicitors Dinner
- Sonoma County Farm Trails Tours
- Marin Ag Land Trust (MALT) Dinner
- Sonoma County Purebred Sheep Breeders Meetings
- Napa County Ag Days
- Sonoma County Ag Days
- Sonoma Marin Ag Days
- 4-H Chickenque
- Sonoma County FFA Project Competition Judging
- Harvest Fair
- Sustainable Agriculture North Bay Panel Discussion
- Advisory input for the Santa Rosa High School Agriculture Program
- Advisory Input for the Elsie Allen Ag Boosters
- Guest Speaker for the Sonoma County Master Gardeners
- Guest Speaker for the Wildlife Society: Western Section Symposium
- Guest Speaker for Wildlife Rehabilitators Annual Conference

To allow the community to become acquainted with our skills, departmentally we are also engaged in the following activities:

- Authored articles for the Sonoma County Farm Bureau Newsletter
- Dairy, Beef & Round Robin Judge at Napa County Fair, Redwood Empire Fair & Sonoma County Fairs
- Commentator and Carcass Contest Judge for Beef and Sheep at Sonoma County Fair
- Guest speaker at Redwood Empire Veterinary Medical Association meetings

- Guest speaker at Marin Veterinary Medical Association meeting
- Planning & implementation of the Sonoma County livestock judging clinic & contest
- Pruning contest for the Russian River Valley Pruning Contest
- Sonoma County Grape Day UCCE Seminar
- SCWC "Agricultural Labor Compliance Workshop"
- SCWC "IPM/Organic Grower Field Day"
- Judge Healdsburg Science Fair
- Advisory input for Windsor Institute for Sustainability and the Environments
- Advisory input for Project Learning Tree
- Participate on the SRJC Institute for Environmental Education Committee
- Participate on the Pepperwood Educational Committee
- Organized and serve on board of the Redwood Empire Veterinary Technician Association
- Hosted Shone Farm Fall Open House

In reviewing community outreach, we feel confident that by attending and participating in these events departmentally we demonstrate to the college and the community a committed effort towards supporting and promoting agriculture and the natural resources of Sonoma County.

Clinics/Seminars/Conferences which instructors have recently attended include:

- Sonoma County Winegrape Commission (SCWC) Seminar and Annual Update
- American Society for Enology and Viticulture Annual Conference
- Temple Grandin, Animal Welfare Update Seminar
- California Agriculture Teachers Association Annual Conference: The department maintains a high professional profile and plays an active role in the California Agriculture Teachers Association (CATA). In 2003 & 2010, the SRJC Agriculture/Natural Resources Department received the California Community College Agricultural Association's Most Outstanding Community College Program Award. The department has a former CATA President and a California Community College State Chair on its current staff. The majority of the faculty regularly attends the section, regional, and state activities of the association.

There has also been additional usage of Shone farm for community activities supporting 4H/FFA field days, short courses, and annual industry meetings, such as the:

- SRJC Livestock Judging Clinic - At this annual event, over 150 new and returning livestock judging enthusiasts improve their judging skills for use in livestock judging contests or selection of fair animals. Utilizing classes of Sheep, Beef, Swine and Meat Goats, generously provided by soliciting the agricultural community, the SRJC Livestock Judging Team provides workshops to local youth who want to improve their livestock evaluation skills. In addition, oral reasons and note taking are reviewed. The Santa Rosa Junior College Ag Ambassadors also offer a food booth for snacking opportunities. Proceeds benefit the SRJC Agriculture and Natural Resources programs and Shone Farm.

- Annual Santa Rosa Junior College Invitational Project Lamb and Meat Goat Sale - The day offers over 500 buyers the chance to participate in seminars given on sheep and meat goat selection, showmanship, and fitting, as well as the Ethics and Quality Assurance seminar required for State Fair Exhibitors. At the event, the Santa Rosa Junior College Ag Ambassadors also offer a concession stand for lunch. Following the sale there is a Jackpot show of purchased lambs, evaluated by a nationally recognized judge. Proceeds from this event benefit the SRJC Agriculture and Natural Resources programs and Shone Farm.
- SRJC Livestock Judging Contest - At this Annual Sonoma County event, 9 classes of beef, sheep, swine and meat goats are provided from the agricultural community. Awards are handed out, including buckles for the high individual in junior 4-H, senior 4-H, and FFA. At the event, the Santa Rosa Junior College Ag Ambassadors also offer a food booth for snacking opportunities. Proceeds from this event benefit the SRJC Agriculture and Natural Resources programs and Shone Farm.
- Santa Rosa Junior College Shone Farm Fall Open House- This event was hosted for the first time in 2011 with over 700 participants. In 2012, over 2000 participants came out to this festive, carnival atmosphere with tasty Shone Farm refreshments and fun activities for the whole family including a vegetable and pumpkin U-pick, tomato sling shot, wine tasting, chicken races and tractor rides, which showcased Shone Farm and our instructional programs. Proceeds from this event benefit the SRJC Agriculture and Natural Resources programs and Shone Farm.
- The Sonoma County Pruning Championship - This event serves as a valuable marketing and educational tool dedicated to the promotion of Sonoma County as one of the world's premier grape growing regions. Additionally this event helps to increase awareness and recognition of the quality and diversity of Shone Farm's vineyard, grapes and wines
- Various tours of Shone Farm - Guided by Ag/NR Department faculty, staff and students, tours of Shone Farm's outdoor learning laboratory facility are provided to various community entities with the goal of these presentations being to educate students about Shone Farm, the Agriculture Ambassadors, and SRJC's Ag/NR programs.
- There has also been a substantial increase in grant funded projects that utilize Shone Farm. One grant acquired by the Sustainable Agriculture program for 2010-2011 was a Felton Foundation Grant for \$25,000, aimed at developing a Shone Farm marketing plan. Additionally, a USDA Farmers Market Promotion Program grant was awarded in 2011 in the amount of \$65,719 over 2 years, aimed at promoting Shone Farm products. This grant was completed September 2012. Additionally, the Ag Department, the SRJC Small Business Development Center and the Latino Service Providers collaborated with the University of California Cooperative Extension (the lead agency) on a \$750,000 grant aimed at training beginning future ranchers and farmers. The USDA Beginning Farmers and Ranchers grant runs October 2011-August 2014, using Shone Farm resources at least once a month during the 6 month instructional periods. The final grant awarded in the Sustainable Agriculture program came from the CCC Chancellor's Office. This \$20,914 Collaborative Sustainable Agriculture Grant was aimed at providing elementary school children exposure to sustainable agriculture. Funding was used to provide visits to Shone Farm and a 2 week long intensive

summer academy for local high school students. Additional grants that have been submitted but not yet awarded as of Spring 2013, include:

- NSF-ATE grant for \$200,000 (July 2013 - June 2016) to improve pathways in Sustainable Agriculture Education for the North Bay Region of California
- Specialty Crops Block Grant Program (October 2013-June 2016) to
1. Train the next generation of farmer for the growing California olive oil industry (\$385,211) 2. Innovative Specialty Crops Oriented Program in Education (\$398,925).

Industry networking is also evident from the successful fund raising efforts for the instructional programs. Most notable of the fund raising efforts is through the SRJC Foundations' Ag Trust, which is a committee of 20 community members and SRJC faculty /staff whose focus is to encourage financial support of the Agriculture and Natural Resources Department at Santa Rosa Junior College. Since 1969, the department's program expansion, student enrollments, and resources have grown to keep pace with the agriculture needs of Sonoma County; unfortunately, district support has not been able to keep up with the resultant growth. Accordingly, the SRJC Foundation Ag Trust was established in 1998, with the purpose of raising funds for the benefit of the department and its students. With the success of working with major gift partners, fun and exciting fundraising events, & annual contributions from individual and business donors, the SRJC Foundation AG Trust has raised over \$1,000,000 and is able to fund a wide variety of annual projects benefiting the Agriculture and Natural Resources Department and students. In addition to raising funds for the benefit of Agriculture and Natural Resources Department for annual funding needs through the Ag Trust Fund, the SRJC Foundation Ag Trust is currently working on building two endowment funds for the long-term benefit of the department and its students: the Warren G. Dutton Jr. Endowment for the Future of Agriculture and the Steve Olson Outstanding Agricultural Scholar-Leader Award. Funding from the Ag Trust would not be possible were it not for the tremendous amounts of hours put in by the SRJC faculty chairing a number of committees required to put on the Agstravaganza fundraising event. For example, Pj LoCoco's committee spent over 700 hours chairing/designing/constructing/deassembling the decorations for the 2008 Steve Olson Agstravaganza event. Casey Cole served as co-chair for the auction and food committees, and served as chair for food service to the VIP tables. Bob Fraser served as chair of the wine service for the VIP tables and generously provided wines from the San Francisco Wine Chronicle Competition. Involvement at this level required immense input of time and resources, and obviously indicates a strong commitment by the faculty to the success of SRJC's Ag/NR Department.

Starting in 2011 an additional activity which utilized faculty time was requests made by the Shone Farm Foundation for departmental and program updates. Each meeting the Foundation requested a program coordinator come to their quarterly meetings to provide a presentation regarding their use of Shone Farm. Starting 2012, an additional activity which utilized faculty time and resources, was the Viticulture Advisory Committee recommended winery appreciation luncheon. This event was strongly pushed by the viticulture advisory committee to acknowledge and thank the Sonoma County viticulture community for their tremendous support of the Shone Farm vineyards. While these requests of

faculty resources and time are obviously worthwhile endeavors, unfortunately the department does not have the staffing or financial resources necessary to provide the continued liltany of requests, as they are already overwhelmed with program coordination and instructional obligations in a time of diminishing resources. Outside district requests are certainly something in the future that are going to be have to be reevaluated prior to recommitting to such endeavors.

1.1d Hours of Office Operation and Service by Location

The Agriculture and Natural Resource Department has day and evening classes, Monday through Sunday on both the Santa Rosa and Petaluma campuses as well as at the Shone Farm in Forestville. Many classes are also offered during weekends. Historically the Ag/NR offices were served by an administrative assistant for 40 hours per week. Staring February 2011, the administrative assistant hours for the Ag/NR Department were permanently reduced to 32 hours/week (80% time). Due to an extended maternity leave request and the resulting abdication, starting in 2011, the Ag/NR Department offices were staffed by an STNC administrative assistant. Departmentally in an effort to have permanent coverage and administrative pressure the department's AAIII position was prosed for reduction to an AAII position. Unfortunately this has locked the position in classified human resource negotiations, resulting in continued staffing by an STNC. Staffing by an STNC has placed a tremendous burden of additional responsibilities on already overloaded department chair. Ideally this position would resume to a fully funded permanent 100% position to support the Ag/NR department.

Additionally the Shone Farm adminstrative offices would be open M-F, 8-5 pm to assist students, staff and faculty. Unfortunately as of Spring 2013, the Shone Farm office is only staffed by a 80% Administrative Assistant.

1.2 Program/Unit Context and Environmental Scan

The value of agriculture-related degrees cannot be underestimated. No other industry can feed the world's population that is growing at a rate where we cannot produce enough food for the number of people. According to research (Feedstuffs, October 26, 2009) our food production must double by 2050. Currently 21 million American workers produce, process and sell the nation's food and fiber, and the average age of today's farmer is 55.3 years old. Due to imminent retirements and the difference between the current rate of global agriculture productivity and the pace require to meet future needs of our growing world population, graduates in agriculture degree programs are needed. According to the latest data from AgCareers.com, 81% of jobs in the ag industry require education beyond high school and almost half require at least a bachelor's degree. According to the AgCareers.com/AgrowKnowledge Enrollment and Employment Outlook Report in 2008 there was a deficit of 9,317 graduates with agriculture degrees to fill open positions in the US. The USDA also estimates there are or will be 54,500 annual openings for individuals with baccalaureate or higher degrees in food, renewable energy and environmental specialties between 2010 and 2015. The USDA study projected only 53,500 qualified graduates will be available each year and stated that employers have expressed a preference for graduates from colleges of agriculture and natural resources that tend to have more relevant work experience.

Although the US unemployment rates remained high in 2012, AgCareers.com experienced a significant increase in jobs posted on their website. In 2012, AgCareers.com had almost 40,000 job openings posted in the United States (up 16% from the previous year). That is more than 3,300 agriculture-related job openings each month. Further demonstrating the need for educated agriculturalists, the November 2011 Monthly Labor Review projected particularly strong (double-digit) growth in certain agricultural careers such as agricultural inspectors, animal scientists, food scientists and technologists, natural sciences managers, pest control workers, soil and plant scientists, and veterinarians. December 2011, the Washington Post printed results of a Georgetown University study showing that recent college graduates with degrees in agriculture and natural resources were among those with the lowest unemployment rates in the nation at 7 percent, surpassed only by graduates with degrees in health (5.4 percent) and education (5.4 percent).

Agriculture positions are not only production-based, but encompass a broad range such as sales representatives, research scientists, quality assurance, marketing and engineers, just to name a few. The average starting salary for a graduate in the ag industry is almost \$49,000 (according to the AgCareers.com/AgrowKnowledge Enrollment and Employment Outlook Report and the AgCareers.com Compensation Benchmark Review).

Agriculture is the top economic driver in California and generates over \$43 billion in revenue for the state. According to the California Department for Food and Agriculture, California agriculture is experiencing record growth and production with a 15 percent increase in the sales value of its products in 2011. The state's 81,500 farms and ranches received a record \$43.5 billion for their output last year, up from the \$38 billion reached during 2010. California remained the number one state in cash farm receipts with 11.6 percent of the US total. The state accounted for 15 percent of national receipts for crops and 7.4 percent of the US revenue for livestock and livestock products. California's agricultural abundance includes more than 400 commodities. The state produces nearly half of US-grown fruits, nuts and vegetables.

The California Community College Centers for Excellence recently completed an environmental scan of the agriculture value chain in California (www.coecc.net/Environmental_Scans/ag_scan_cv_11.pdf) and found that there are currently 2.5 million individuals employed in more than 800 job titles within the agriculture value chain in the state. The average annual salary for agricultural value chain workers in California is \$50,000 (California careers as a whole average \$43,000). While the number of production jobs (currently 206,303) is expected to decrease in the next five years (due to the increasing efficiencies and mechanization), a net increase of 181,000 jobs is expected throughout the entire agricultural value chain, which includes support, research, technology, production, processing/packaging, marketing, and sales and distribution.

In a recent 2011 survey by the Economic & Workforce Development Initiative through the California Community Colleges, agriculture employers were asked to describe their organizations level of interest regarding educational and training programs that could be developed by community colleges for the agriculture value chain and workforce. The majority of responses indicated interest in on-site customized training for current employees and a certificate specific to occupations.

Following are highlights of industry trends related to the disciplines within the Ag/NR Department.

VETERINARY TECHNICIAN

The demand for Registered Veterinary Technicians is nothing short of extreme. There are far fewer RVTs in Sonoma County than are required by the labor market. The California 2010 EDD data shows an acceleration of need for RVTs. There were 120 registered RVTs in 2010 and with an anticipated need of 200 by 2020. This 66.7% growth is once again the strongest for any county in California. In addition there are the estimated 250 Veterinary Assistant positions in our county. State estimates for the 2010-2020 time frame include an anticipated 31% growth in technician positions (2,600 new jobs). According to the California Veterinary Medical Board there are 138 Registered Veterinary Technicians residing in the Sonoma County as of January 2012 to fill an estimated 240 positions. EDD labor market data are consistent with the number of workplace facilities (94 current premise permits) and veterinarians (231 valid licenses) in Sonoma County. According to the US Bureau of Labor Statistics the job prospects for Veterinary Technicians is "excellent". The 2010 data update has an increased anticipated growth of 52% or over 40,000 new jobs and 50,000 openings over the next 10 years.. As of 2010 Veterinary Technicians are now listed under "Healthcare Professions" by BLS rather than Professional, Scientific, and Technical Services. The job prospects are still excellent, but the category change means they are no longer at the top of their list.

Santa Rosa Junior College is the predominant source for RVTs. Over the last three years 84% (26/31) of new RVT licenses in Sonoma County were earned by SRJC students.

Over the last few years Dr. Famini has developed a google group for employment and other announcements. Over 300 current and former SRJC students are members and hospitals now routinely email job announcements to Dr. Famini in preference to Craigslist or other sources. Taking into account the usual sources (craigslist, etc) and the google group listings there are over 300 jobs/year for veterinary support staff in the Sonoma/Marin county area.

The closest community colleges that offer a Veterinary Technician program are Consumnes River College in Sacramento (~2 hours drive) and Foothill College in Los Altos Hills (1hr 45 minute drive). There are also branches of the private school Western Career College in Pleasant Hill and San Leandro (about 1hr 15 minute drive). However, current Western Career College tuition is about \$35,000 for the two-year program. All of the above programs are distinct from SRJC in that they are AVMA approved full time programs that include far more extensive hands-on component, maintain colonies of canine and feline patients, etc.

Recent articles mentioning the strong job market for Registered Veterinary Technicians include:

“Eight secure jobs worth landing this Spring and beyond” on Fox Business News posted 3/27/2013.

“Animals Need Health Care Too” in Community College Week from 2/22/2010.

“Vet Techs in Demand” in the Press Democrat on 8/23/2009. This was a reprint of a New York Times Article.

Veterinary Technicians were listed as Number 2 in “150 Best Recession-Proof Jobs” by Laurence Shatkin, Jist Publishing, November 2008.

The critical demand for Registered Veterinary Technicians locally, statewide, and nationally continues to fuel strong student enrollment in courses. Additionally, there is an overall trend towards larger specialty hospitals and corporate ownership of hospitals (Veterinary Centers of America and Banfield). The larger and corporate hospitals tend to better utilize Registered Veterinary Technicians. This is due to both to a need for more technically advanced veterinary assistants as well as the fact that RVTs are a cheaper alternative to perform many of the tasks reserved for veterinarians in smaller hospitals. This includes a greater role in client communication, veterinary dentistry, vaccine appointments, etc. Larger and corporate practices are also less likely to allow unregistered assistants to perform tasks legally reserved for RVTs such as inducing anesthesia and placing splints.

The SRJC Veterinary Technician Program fulfills the state Veterinary Medical Board requirements for students to sit for the state Registered Veterinary Technician board exam through the alternate route. There are three routes to be eligible to sit for licensure. 1) Attend a full time American Veterinary Medical Association 2-year program (the closest program is ~100 miles from Santa Rosa) 2) Already have an equivalent license from another state and have a minimum number of clinical experience or 3) the Alternative Route. The alternative route consists of two basic requirements: Academic requirements and Clinical experience requirements. The Academic requirements consist of many specific areas of instruction within 20 semester units. The SRJC fulfills this requirement. The Clinical experience required is 4416 hours under the supervision of a veterinarian and includes a list of specific job tasks that must be completed. The SRJC program includes the Academic component only and it is up to the student to meet the clinical requirement.

The Veterinary Technician Program offers an annual seminar on the admissions requirements and pathways to Veterinary School. This is followed by a unique tour of the UC Davis School of Veterinary Medicine which includes touring the Anatomy Lab, Surgery Lab, the teaching Hospital, meeting the admissions staff and sitting in on a few veterinary school lectures. We are the only community college in the state offering this opportunity.

Several partnerships have been developed over the last few years.

- The Small Animal Emergency Medicine class is now offered every odd Spring Semester. This class is held at Animal Care Center, the largest veterinary

emergency center in the county. This class included over a dozen guest speakers from both Animal Care Center and Petcare emergency veterinary hospitals. It has become the most popular elective in the program.

- In order to provide hands-on class activities with live animals the program now partners with several local rescue groups: Bergin University for Canine Studies (formerly Assistance Dog Institute), Pets As Loving Support therapy dogs, cats from two local non-profit rescue troupes, and Reading Therapy Dogs from another group. Animals from Sonoma County Reptile Rescue are also used in a single class per semester.
- Through cooperation with Paws Are Loving Support and the Humane Society of Sonoma County we have put on a free vaccine clinic for the pets of AIDS patients. This is the capstone experience of the Small Animal Nursing (AnHlt120) course. This is a win/win/win situation where the SRJC students gain valuable experience, PALS and their pets get preventative medical care, and the Humane Society is provided with a labor force to make this event possible.
- Cooperation with the shelters in the county continues with students volunteering or working in 5 different animal shelters including the continued intern program at Sonoma County Animal Care and Control helping this municipal shelter and giving students hands on experience in a variety of capacities including animal intake, spay/neuter clinic support, etc.
- Since Fall 2010, the SRJC program offers a job shadowing rotation where students are invited to observe and participate in a variety of different veterinary clinical settings. This semester long weekly rotation has exposed 12 to 15 students per semester to hospitals including: Eye Care Center for Animals, Humane Society of Sonoma County, Large Animal Hospital of Cotati, Memorial Beach Animal Hospital, Montecito Animal Hospital, PetCare, VCA Animal Care Center, VCA Forestville, and Bradner Veterinary Hospital among others.

There has been minimal change in outside funding. The Redwood Empire Veterinary Medical Association has pledged to contribute \$500 year to fund an annual scholarship that would allow a Veterinary Technician student to sit for their Board Exams. Additionally, the Association now holds their annual Continuing Education event for veterinarians at the SRJC Shone Farm. For the 2010-2011 year, Dr. Famini received \$21,410 in CTEA funding and \$7,000 in 2012-13 for Vet Tech instructional equipment.

Historically no local venue existed for working RVTs to communicate or gain a perspective of their profession outside the walls of their own clinic. Additionally, as of July 2011 there is mandatory CE requirement for RVTs. To remedy these two problems Dr. Dan Famini founded the Redwood Empire Veterinary Technician Association. Since July 2011 this organization has held monthly CE and networking meetings with 50-80 attending RVTs and veterinary support staff. There is now a 11 person Executive Board consisting of 10 RVTs and Dr. Famini, with an all RVT officer team taking this project forward.

EQUINE SCIENCE

Current estimates place 6.9 million horses in the United States involving 7.1 million Americans in diverse, sophisticated and high tech positions that annually employ 1.4 million full-time employees in all regions of the country. These people serve the industry, providing over \$2.5 billion in goods and services annually. This relates to a

total impact of \$112.1 billion on the US Gross domestic product. In Sonoma County, the value of agricultural production and household horse-riding activities amount to 468 million dollars, almost one quarter of the value of Sonoma County farming. Horses are Sonoma County's #2 agricultural industry. Current production and market indicators suggest that the equine science industry will continue to experience growth. Areas for growth in the industry include breeding, training, and maintaining horses, operating tracks, show and recreational facilities as well as numerous ancillary activities. These include feed, tack, equipment, and real estate sales, legal services, art, photography and literature. Students who have earned a degree at Santa Rosa Junior College with a major in Equine Science are more than qualified for a wide variety of diverse careers in the equine industry.

California community colleges that offers Equine Science courses include Modesto College, Sierra College, College of the Sequoias and Shasta College. These institutions, however, do not offer full certificates or majors in Equine Science, like SRJC. The only other California community college which offers a full degree in equine science is Feather River College in Quincy. This program offers a markedly different program than SRJC however, as it is geared towards competitive rodeo and backcountry horsemen. SRJC's program, in contrast, is a broad technical study of all phases of equine business and management practices, coupled with general studies to produce graduates that are well rounded individuals capable of entering all phases of the equine industry. Another thing that sets SRJC's Equine Science program apart from all other colleges in the nation, is our therapeutic riding program. Recognized as one of the most progressive forms of therapy, therapeutic riding offers students with disabilities the ability to control a horse as well as one's own body. The college offers courses for training in therapeutic riding, as well as courses for riders that work to increase balance, muscle control, strength, concentration, patience, responsibilities, and teamwork. Only one other community college in the nation has a therapeutic riding program.

With the exception of the therapeutic riding program being certified by the North American Handicapped Riding Association, there are no outside requirements for licensing/accrediting EquineScience at SRJC or these other institutions.

In 2010, CTEA funding was used to acquire a hotwalker, with installation by Shone Farm. Additionally in 2011, the Equine Science program obtained \$21,000 in funding from the CalRecycle Tire Derived products program for shredded rubber and stall mats for use in the equine unit and beef unit.

ANIMAL SCIENCE

World food demand for food of animal origin will double in the next 25 years in order to feed an expected population of 9.1 billion. Trends in the animal science industry show an increase in vertical integration with a decrease in the number of producers, but larger sized operations; increased specialization to improve efficiency; increased geographic concentration. The above needs will need to be achieved while minimizing the costs to animals, environment and humans. Current SRJC courses, certificates, and majors are have been refined to meet these trends.

Employment trends show an average increase in the need of Animal Science graduates by 12.9%. Currently, 6.4% of all animal scientists have a professional degree, 23.5% have a doctoral degree, 21% have a master's degree, and 35% have a bachelor's degree. Only 5.3% have an associates degree. Due to these

demographics, the majority of SRJC's animal science offerings are geared towards the transfer student. In Fall 2011, the Animal Science Coordinator, with advisory committee input, determined that based on employment options, the Animal Science certificate was no longer necessary, and subsequently approved for discontinuance.

Animal Science associates degree students served Santa Rosa Junior College are helping to produce the increased value of animal agriculture production in California; between 2000 and 2010 there was a boost of more than \$3.2 billion in total economic output from animal agriculture for the state. This growth increased household incomes by more than 17,000 jobs, according to a report funded by the United Soybean Board. At the national level, the study found that the rise in value of US animal agriculture production in the last decade resulted in more than \$22 billion in total economic output. This produced a nearly \$4 billion increase in household incomes and 128,700 jobs.

In 2010, the total economic impact of animal agriculture in California was more than \$19 billion, compared to \$289 billion nationally. The effect on household earnings was \$3.6 billion in the state and \$51 billion nationally. Animal agriculture contributed 101,178 California jobs and more than 1.8 million jobs to the US economy.

The average animal scientists has a starting salary of \$31,540. The average salary earned is \$53,230.

California community colleges that offer Animal Science programs include Modesto College, Merced College, West Hills College, College of the Sequoias, Reedley College, Shasta College, and Bakersfield College. There are no outside requirements for licensing/accrediting of Animal Science programs for SRJC or any other community college institutions. In the coming year however, due to the growing concern for animal welfare it may necessary to investigate the development of an Animal Care and Use Committee for Shone Farm.

There has been minimal change in outside funding. Partnerships have been developed with community members for leasing of breeding animals, in order to preserve the limited livestock budget.

VITICULTURE

Winegrape production in Sonoma County totals over four hundred million dollars annually and accounts for the greatest revenue of all agricultural crops in the county (Figures from Sonoma County Ag Comm Office 2010 Crop Report can be found at http://www.sonoma-county.org/agcomm/crop_report.htm). About 73% of Sonoma County's agricultural production is growing wine grapes—60,302 acres of vineyards, with over 1100 growers.

The long-term outlook for the wine industry is positive as demographic trends suggest the consumer market will remain strong. In 2012, the Wine Institute reported a record 5.6 percent increase in cases of California wine sold in the U.S., compared to the previous year. The estimated retail value of the shipments totaled nearly \$20 billion, according to figures that institute released. During the same period, U.S. wine exports – 90 percent of which came from California – reached a new record of \$1.39 billion in winery

revenues in 2011, an increase of 21.7 percent compared to 2010. 120,000 new wine labels were approved last year by the U.S. Tax and Trade Bureau.

Total wine sales in the U.S. from all production sources – California, other U.S. states and foreign countries – climbed to a new record of 347 million cases, a 5.3 percent jump from 2010, with an estimated retail value of \$32.5 billion, John Fredrickson of Gomberg Fredrickson & Associates reported, marking the 18th consecutive year of volume growth in the U.S. California's nearly 212 million cases held a 61 percent share of the U.S. market.

Additionally it should be noted that Sonoma County's reputation as a major wine producing area will grow over the next several years as a result of recent legislation and marketing efforts. A state requirement that wines produced in the county include the phrase "Sonoma County" along with its American Viticulture Area was signed into law in fall 2011 and will go into effect in 2014. Similar laws are credited with increasing the profile of other California wine growing areas (including neighboring Napa County) resulting in an increase in viticulture productions.

Partnerships: Partnerships exist between the SRJC Viticulture program and local wineries purchasing fruit from Shone Farm Vineyard. Dependent upon contract negotiations, these wineries include Benzinger, Rodney Strong, Merry Edwards, La Crema, Arrowwood, Korb, Clos Du Bois, and Sonoma Cutrer. Also the Sonoma County Winegrape Commission has been conducting workshops and trainings at the Shone Farm and SRJC viticulture students have been invited to participate at no charge.

Increase of funding from Sonoma County Vineyard Technical Group for some specialized pieces of equipment for Viticulture classes has been provided. Additionally the Sonoma County Winegrape Commission has provided a weather station for Shone Farm, which serves as a resource for all of Sonoma County as well as an educational tool for students.

Napa Valley College and Allan Hancock College provides a community college certificate or major in viticulture.

NATURAL RESOURCE MANAGEMENT

Natural Resource Management is a rapidly growing field, particularly in light of challenges to our environment like global warming, exponential population growth and potentially dangerous carbon emissions.

Environmental scientists work to find ways to meet and overcome those challenges, in order to maintain a livable environment for generations to come.

The jobs available to natural resource management graduates is diverse and in a wide range of settings. The U.S. Bureau of Labor Statistics lists some of the tasks handled by these professionals as: Monitoring watershed, finding ways to preserve water supplies, writing policies to preserve natural resources, consulting with companies to help them become more environmentally responsible, working with government entities to develop regulations and ensure they are followed. Scientists in this field often have

backgrounds similar to those that work in physical or life science, but their focus is on environmental issues. Most that come into this field have a strong math and science background, and a minimum of a two-year degree in natural resource management to get into an entry level position. The U.S. Bureau of Labor Statistics predicts the field of natural resource management to grow at a much faster than average pace over the next few years.

Example of anticipated career changes for natural resource management include:

Forestry Technicians: Expected growth of 9% over 2008-18 as more land is set aside to protect natural resources or wildlife habitats. Also, more jobs may be created by recent Federal legislation designed to prevent destructive wildfires by thinning the forests and by setting controlled burns in dry regions susceptible to forest fires.

Parks and Recreation: Employment of recreation workers is projected to increase by 15 percent between 2008 and 2018. This growth is being driven by an increased interest in the “No Child Left Inside” program, which is fueling civic and social organizations and fitness and sports centers to increase their outdoor recreation activities.

Other Community Colleges offering Natural Resource Management programs in California include Truckee Meadows Community College, Reedley Community College, Shasta College, De Anza College, American River Community College, Butte Community College and Feather River Community College. Four year institutions in California that SRJC graduates transfer to in Natural Resource Management include UC Davis and Santa Cruz, and CSU Chico, Humboldt, Bakersfield, and Channel Islands. Numerous SRJC courses articulate with these four year institutions.

Licensing/accrediting agencies related to SRJC's Natural Resource Management program include the Seasonal Law Enforcement Park Ranger Academy – Windsor Training Center (recommended).

Partnerships or cooperative ventures existing with local employers include: Sonoma County Agricultural and Open Space District, Sonoma County Regional Parks, U.S. Army Corps of Engineers, North Bay Conservation Corps, National Park Service and Forests Unlimited.

SUSTAINABLE AGRICULTURE

Now that organic food has a nationally recognized production standard and is overseen by the United States Department of Agriculture, organic food has become legitimized in America as sales steadily climb. The number of certified organic farms and processing facilities in the United States increased nearly 3 percent from the end of 2010 to the end of 2011, with California still leading the nation with the most organic operations, according to the U.S. Department of Agriculture. USDA database shows a total of 17,673 U.S. farms and processing facilities were certified to the standards of the National Organic Program as of the end of 2011. That's 478 more operators than the end of 2010. The current total is also a 240 percent increase since the program started tracking that information in 2002. The database shows California has 3,853 certified organic operations. That's compared to 2,714 organic farms in 2008, although that number comes from the USDA Census of Agriculture and includes farms that are certified and exempt. U.S. Deputy Secretary of Agriculture Kathleen Merrigan said USDA has been working to increase the number of certified organic operations in the nation by 20 percent by 2015. Starting from the 2009 baseline of 16,564 operations, she said the goal is to hit a total of 20,655 certified operations in another three years.

With such a rapidly growing market in Sustainable Agriculture, there are multiple areas that offer interesting employment options to students who are prepared in SRJC's Sustainable Agriculture program. Employment opportunities upon completion of the SRJC Sustainable Agriculture program may include:

- Farm owner
- Niche grower of specialty produce, flowers, herbs, fruits and nuts
- Farm or garden manager - field or office
- Farming / Gardening consultant - private or company employee
- Seasonal Farm intern / apprentice (plant, irrigate, weed, harvest)
- Farmer's Market manager / assistant and/or vendor
- Retail/Wholesale nursery production (greenhouse/sales)
- Farm Advisor and/or research assistant with County Ag Commissioner, Cooperative Extension or United States Department of Agriculture
- School Garden coordinator
- Compost production and sales
- Organic support/sales and services (fertilizers, seed, equipment, etc...)
- Sustainable livestock production / Range or ranch manager
- Chef/restaunteur
- Pest control advisor
- Public garden / botanical garden employee
- Farm/Garden estate caretaker
- Agriculture teacher / public speaker/ company representative
- Value-added product creator (ie. wreaths, jams, brewer, tincture, oils, etc...)
- Nursery grower/worker for container vegetables, herbs, bare-root fruit trees

Santa Rosa Junior College is the only community college in California that offers an A.S. degree and two certificates in Sustainable Agriculture. Some of the curriculum is aligned with lower division Sustainable Agriculture major preparation at UC Davis, UC Santa Cruz, Cal Poly, and other universities.

Licensing/accrediting agencies related to Sustainable Agriculture programs are optional. Certifications can be obtained if desired in CCOF, Sustainably Farmed, Humane Farmed, Biodynamically Farmed, etc...

There has been a substantial increase in grant funding. One grant acquired by the Sustainable Agriculture program for 2010-2011 was a Felton Foundation Grant for \$25,000. Additionally, a USDA Farmers Market Promotion Program grant was awarded in 2011 in the amount of \$67,719 over 2 years, aimed at promoting Shone Farm products. Additionally, the Ag Department, the SRJC Small Business Development Center and the Latino Service Providers collaborated with the University of California Cooperative Extension (the lead agency) on a \$750,000 grant aimed at training beginning future ranchers and farmers. The USDA Beginning Farmers and Ranchers grant will run for 9 months starting March 2012. The final grant awarded in the Sustainable Agriculture program came from the CCC Chancellor's Office. This \$47,000 Collaborative Sustainable Agriculture Grant is aimed at providing elementary school children exposure to sustainable agriculture. Funding will be used to provide visits to Shone Farm and a 2 week long intensive summer academy.

WINE STUDIES

The Wine Studies program has four emphases: Wine Evaluation & Service, Wine Business & Marketing, Enology, and Wines & Vines. The program prepares students for a variety of positions in the wine industry, such as: grower relations manager, viticulture wine quality specialist, winery laboratory assistants, cellar masters, assistant winemakers, winery education directors, wine quality control specialists, sensory evaluation personnel, wine sales specialist, wine club administrator, sales manager, public relations and marketing coordinator, and wine merchandiser.

In 2012, the Wine Institute reported a record 5.6 percent increase in cases of California wine sold in the U.S., compared to the previous year. The estimated retail value of the shipments totaled nearly \$20 billion, according to figures that institute released. During the same period, U.S. wine exports – 90 percent of which came from California – reached a new record of \$1.39 billion in winery revenues in 2011, an increase of 21.7 percent compared to 2010. 120,000 new wine labels were approved last year by the U.S. Tax and Trade Bureau.

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Numerous SRJC Wine Studies courses are articulate with UC/CSU viticulture and enology programs.

Napa Valley College, Allan Hancock College, and Las Positas provide degrees, or certificates in the same discipline. Additionally it should be noted that there are a number of private Wine Studies programs.

There are no requirements of licensing/accrediting agencies related to wine studies. There are future plans to create some wine sommelier accredited licensing certificates.

Efforts are underway to expand opportunities for students to become involved in the Shone Farm Winery, assisting the winemaker with all aspects of the operation, from production to marketing and distribution.

ENVIRONMENTAL HORTICULTURE

Increased interest in the quality of the environment, conservation, and restoration projects has stimulating growth in the horticulture industry over the last several years. California's environmental horticulture industry leads the nation with 21.9% of total nursery production and 8.6% of lawn and garden retail sales. California represents over a quarter of U.S. wholesale nursery production and retail sales, creating a total of 192,065 California jobs. 74,940 jobs come from production, 76,225 jobs from lawn and garden retailing, and 40,900 result from indirect and induced effects. The total payroll exceeds \$5.58 billion, with \$2.52 billion from floral and nursery production and over \$3.05 billion from lawn and garden retailing .Combined, nursery and floriculture are California's #2 agricultural commodity, producing 9.1% of the state's total agricultural

output. Nursery products, flowers and foliage are produced in 55 of California's 58 counties. Nursery stock is a number one crop for 12 California counties, reporting sales of over \$100 million/county.

Nevertheless, due to the economic downturn, particularly in the construction industry, the current job market is difficult. EDD labor market information data projects a 9.6% increase in Landscaping and Groundskeeper Supervisor positions for 2008-2018 in California and a 9% increase in Sonoma County. For Landscape Groundskeepers and Workers, the projection is a 14% increase in California and a 14% increase in Sonoma County.

The employment outlook for the category of Farmworkers, Laborers, Crop and Nursery Workers in California is flat with a -.1% change. In Sonoma County, a 4.49% increase is projected. The Environmental Horticulture Advisory Committee confirmed the weakening job market in the nursery industry and the value and need for the two nursery certificates will be assessed in the coming year.

Longer term, as the economic recovery continues, the landscape field should strengthen. Private and commercial property values are enhanced by professionally designed landscapes, and the services of large and small landscape firms should return to be in high demand. In addition, a significant number of independent, entrepreneurial landscape/garden designers offer services throughout the county.

Graduates who possess landscape management skills are qualified to advance into supervisory and management positions within landscape contracting firms, design or landscape construction companies, municipal, state, county, and federal agencies, entrepreneurial landscape maintenance enterprises, and other occupations that require the application of plant knowledge, drafting/design, irrigation design, and landscape construction skills.

There are multiple areas that offer interesting employment options and starting pay to students who are prepared by SRJC's Environmental Horticulture program, including:

- Wholesale nursery propagator (\$15-40/hr)
- Wholesale nursery grower (\$10-25/hr)
- Field Superintendent Manager (\$30-45/hr)
- Sales Manager (\$15-20/hr)
- Marketing Manager (\$20-30/hr)
- Floral Designer (\$35-50/hr)
- Landscape Contractor (\$50-80/hr)
- Landscape Designer (\$35-75/hr)
- Irrigation Designer (\$75/hr)
- Private Horticulture Consultant (\$50/hr)
- Certified treeworker (\$25-40/hr)
- Park Superintendent (\$35-50/hr)
- Project Supervisor (\$20-30/hr)
- Landscape Estimator (\$50/hr)
- Foreperson (\$10-22/hr)
- Crew Leader (\$10-22/hr)
- Landscape Gardener(\$10-15/hr)
- Salesperson (\$15-20/hr)
- Integrated Pest Management specialist (\$50-70/hr)
- Salesperson retail florist (\$20-35/hr)
- Instructor (\$30-50/hr)
- Landscape Design Assistant (\$15-20/hr)

The variation of salaries is dependent upon the level of education, type of employment, specific job tasks and skills. Experienced workers typically earn \$10-22 /hr.

Management and supervisory positions have the greatest earning at \$3,500 to \$5,500 per month. Owners/operators of many landscape maintenance businesses earn between \$4,500-8,500 per month. Many residential landscape installation contractors earn between \$150,000 -500,000 per year, gross income.

Environmental Horticulture programs can be found at the following community colleges: Cabrillo College, Foothill College, Santa Barbara City College, Reedley College, Modesto Junior College, Butte Community College, College of the Sequoias and Antelope Valley Community College.

Numerous SRJC Environmental Horticulture classes articulate with the CSU (Cal Poly and Fresno) and UC system (UC Davis).

AGRICULTURE BUSINESS MANAGEMENT

Agribusiness accounts for nearly one-fifth of the U.S. gross national product and employs close to one-fourth of the labor force. This sector includes numerous firms supplying inputs to production agriculture, enterprises producing food and fiber products, companies that process and market these products, and others. During the past decade, there have been overwhelming changes that have affected every phase of the industry. On the domestic scene, there is the consolidation of farms and ranches into larger, more efficient operations that are increasingly industrialized and require more sophisticated management. New technologies, the ascendancy of environmental and nutrition awareness among consumers and the influence of U.S. and foreign policies on agricultural support and trade effect the way the industry does business. Perhaps the most momentous change in the past ten years, however, is the increasing globalization of agriculture.

A recent USDA report finds that there will not be enough qualified individuals to fill all the agricultural business positions over the next few years. Ag Business majors find jobs as loan officers, bank vice presidents, lobbyists, computer service representatives, accountants, sales managers, real estate appraisers, marketing representatives, export trade managers, farm managers, personnel specialists, labor contractors, public relations specialists, as examples.

Most of the students enrolled in Ag Business courses intend to transfer. There are articulation agreements with four year institutions (Cal Poly, Fresno, Chico, Stanislaus, UC, Davis, Sonoma State). Few students, however, complete the certificate. In developing the Ag Master plan, it was determined that the majority of ag students do need core skill sets that include a foundation in basic business, including accounting, computer skills, marketing, using social networking, entrepreneurial skills, as examples. As a result, the Ag Business certificate will be reviewed for possible reconfiguration into certificate that meets of those students who plan on directly entering the work force.

In Summary

In light of all these positive employment trends student enrollment in the Ag/NR Department continues to be high. The department anticipates this trend to continue and will need to work closely with the administration to avoid too drastic of a schedule reduction. Many Ag/NR classes are already over-enrolled and given the size of classrooms, laboratory requirement of most Ag/NR classes, lack of full time laboratory support staff, it is not possible to increase these any further. Much of what the department would like to do in terms of expansion and interdepartmental collaboration will only be possible with permanent staffing support.

2.1a Budget Needs

Over the last 10 years the Ag/NR budget has been cut by 25% in spite of having an increase in diversity and number of offerings. This budget is used for the basic instructional supplies that are used in the act of teaching. Examples include: syringes and fluids used to teach medication administration in AnHlt120 Small Animal Nursing, disinfection supplies used for appropriate cleaning between a veterinary and wine class, etc. As a result the instructional practices are restricted to inherently less successful choices such as talking about how do perform a task instead of actually having a student learn by doing.

The primary purpose and motivation for CTE programs is the direct work place relevance. The best way to illustrate concepts is to see them functioning in the real world and discussing them with working professionals. This requires traveling to various work sites (farms, nurseries, veterinary hospitals, parks, etc.). While the entrance fees to tasting rooms, parks, etc. is passed on to students in the form of student fees, the costs of travelling to sites prohibits many opportunities to learn in the field. In a subset of possible instances students are directed to drive themselves to destinations, but this misses the valuable opportunity to build a more open and functional classroom culture that comes from the joint travel. Allocation of funds to provide for field trips would greatly enhance the learning experience of classes in all 9 of the Ag/NR programs.

2.1b Budget Requests

Rank	RS	ACTV	Object	Location	SP	M	Amount	Brief Rationale
0001	69	0101	4390	Santa Rosa	02	01	\$25,000.00	Increase in instructional supply budget to reflect increase in enrollment that occurred during the last decade, especially in the last couple of years
0002	69	0101	5620	Santa Rosa	02	01	\$5,000.00	Funding augmentation is needed for student fieldtrips. Due to lack of availability of college vans, the Department has had to rent Enterprise vans at a considerable cost.

2.2a Current Classified Positions

Position	Hr/Wk	Mo/Yr	Job Duties
Administrative Assistant II	32	11	Admin duties for Lark Service Center and AG/NR Dept.
Coordinator, Science Labs	20	11	Coordinates labs for Wine Studies, Environmental Horticulture, Natural Resources, Animal Science, Veterinary Technician, General Agriculture, and Sustainable Agriculture.
Administrative Assistant III	40	12	Admin duties for Dean of Agriculture, Natural Resources, and Culinary Arts.

2.2b Current Management/Confidential Positions

Position	Hr/Wk	Mo/Yr	Job Duties
Department Chair (80% release)	32	10	Chair AG/NR Department duties: scheduling, budget, coordination of faculty, staff, outreach, & administration. Based upon the Department Chair release formula, this position receives 78% release time. Each semester the chair farms out 5% of department chair load to each of the 6 program coordinators in the department. Thus the chair retains only 48% of the load.
Dean, Agriculture/Natural Resources	40	12	Supervising administrator for the Ag/Natural Resources Department, including Shone Farm. Fall of 2012 this position was filled by Ganesan Srinivasan. In Spring 2013, Dr. Ganesan was also given the responsibility of the Culinary Department to complete the Farm to Fork Concept.

2.2c Current STNC/Student Worker Positions

Position	Hr/Wk	Mo/Yr	Job Duties
Student Greenhouse Technicians (4)	6	12	Care for plants in greenhouse for Horticulture program; manage monthly plant sale.
Student Laboratory Assistant	10	10	Laboratory support for Wine Studies, Environmental Horticulture, Natural Resources, Animal Sciences, Veterinary Technician, General Agriculture, and Sustainable Agriculture.

2.2d Adequacy and Effectiveness of Staffing

The Ag/NR department and Shone Farm does not have adequate classified, STNC staff, or student workers to support its needs. There is a critical need for more permanent classified staffing, particular laboratory assistance and staff to support Shone Farm operations and instruction. A unique aspect of the Agriculture/Natural Resources Department is the need to continually care for the living animals and plants that are part of student learning labs. This is very labor intensive. Trying to fill these positions with STNC employees would be extremely inefficient, short-sighted, and wasteful.

A note of context for requests 1, 2, and 4:

The loss of full time faculty for 6 of our 9 programs within the last 23 years has left over half of our courses being instructed by new faculty (Agribusiness, SusAg, Agri), 1 incoming faculty next year (Wine), and adjuncts (AnSci, EqSci, part of Agri) over half of whom are new to their specific courses or teaching at all. The neophyte instructors who are unfamiliar with basic JC practices and the act of teaching place a much greater burden on all support staff.

1. Coordinator, Science Lab (100%) (Instructional program-Santa Rosa)

The current Coordinator, Science Lab has been staffed at 50% for the last several years. Over that time period there has been the addition of entire additional programs (Veterinary Technician and the current format of Wine Studies) a significant increase in total student enrollment, total courses, diversity of course offerings. Additionally the department has been expanding to offer more classes on the Petaluma Campus. The lab needs for these classes are being met by having this same part time person preparing materials for the instructor to take with them. This arrangement provides access to our courses to a new student population, but requires greater/less time efficient prep on the part of our Lab Coordinator. Furthermore there is an inherent lack of efficiency with a part time program requiring support at specific, rigid timing dictated by the class schedule. There is a critical need to increase this position to 100%.

2. Lark Hall Administrative Assistant (100%)

Starting February 2011, the administrative assistant hours for the Ag/NR Department were permanently reduced to 32 hours/week (80% time). Due to an extended maternity leave request and the resulting abdication, starting in 2011, the Ag/NR Department offices were staffed by an STNC administrative assistant. Departmentally in an effort to have permanent coverage and administrative pressure the department's AAll position was proposed for reduction to an AAll position. Unfortunately the arbitrary history of a former employee who was pregnant has locked this position in an at the 80% timeframe. This leaves an entire day per week in which our faculty and students have no basic support.

Additionally the loss of full time faculty for 4 of our 9 programs within the last 2 years has left over half of our courses being instructed by 1 new faculty (Agribusiness), 1 incoming faculty next year (Wine), and adjuncts (AnSci and EqSci) over half of whom are new to their specific courses or teaching at all. The neophyte instructors who are unfamiliar with basic JC practices place a much greater burden on all support staff.

3. Hort Tech/Greenhouse Faculty Technician (100%) (Environmental Hort program-Santa Rosa)

For the college to maintain the standards and reputation of the Environmental Horticulture program, a 100% District funded Hort Tech/Greenhouse Facility Technician is needed. Currently, these tasks are performed by part-time student workers and an occasional student volunteer. Plants are sold in the SRJC bookstore as well as at the monthly plant sales (see recent plant sale survey). The current Horticulture instructor's time is being taxed with supervision of these part-time temporary employees (and volunteers). Responsibilities of this position would include: maintaining the growing areas, greenhouse, and nursery; assisting students and faculty with class projects; equipment maintenance, coordination and implementation of monthly plant sales (10 mos/year), Bookstore sales, Petaluma campus sales, school tours, coordination of facility maintenance and record keeping.

4. Forestry Tech (SNTC 50 %)

The Natural Resources program needs a staff person to maintain the Shone Farm forest, i.e. brush removal, trail building, planting seedlings, removing dead limbs and trees and other fire suppression measures, as Shone Farm employees are already overcommitted with other farm obligations. Currently much of the Shone Farm forest responsibilities are falling to interns, community clean up days and special studies

students. Grant work is underway to try and acquire funding for this position via a community forest program.

5. Wine Studies Tech (STNC 100%)

As the largest discipline in the department, the Wine Studies program needs a staff person to assist in classroom and lab set up for enology and sensory evaluation classes.

Data Element	Value	Change from 2011-12	District Total	% of District Total
FTE-S : FTE-F	21.9906	8.15%	28.3270	77.63%
FTE-AF : FTE-CF	1.2842	-19.75%	1.3077	98.20%
FTE-F : FTE-SS	3.1737	0.88%	1.0235	310.07%
FTE-F : FTE-M	8.8829	9.81%	5.4039	164.38%
FTE-SS : FTE-M	2.7989	8.85%	5.2796	53.01%
FTE-ST : FTE-C	0.2505	-11.69%	0.1268	197.55%
Average Faculty Salary per FTE-F	\$46,147.17	7.58%	\$58,570.50	78.79%
Average Classified Salary per FTE-C	\$24,364.50	-40.93%	\$44,716.87	54.49%
Average Management Salary per FTE-M	\$70,950.44	26.43%	\$75,957.24	93.41%
Salary/Benefit costs as a % of total budget	93.37%	0.04%	75.90%	123.03%
Non-Personnel \$ as a % of total budget	6.63%	-0.52%	12.71%	52.14%
Restricted Funds as a % of total budget	2.63%	-24.12%	11.39%	23.12%
Total Unit Cost per FTE-F	\$81,300.35	7.03%	\$170,777.67	47.61%
Total Unit Cost per FTE-C	\$519,968.94	-28.54%	\$273,966.16	189.79%
Total Unit Cost per FTE-M	\$722,179.09	17.54%	\$922,860.52	78.25%
Total Unit Cost per FTE-S	\$3,697.05	-1.03%	\$6,028.78	61.32%
Total Unit Cost per student served/enrolled	\$331.02	-12.77%	\$3,658.53	9.05%

2.2e Classified, STNC, Management Staffing Requests

Rank	RS	ACTV	Location	SP	M	Current Title	Proposed Title	Hrly	Type	Salary Increase	Benefits Increase	Total Increase
0001	69	0101	ALL	02	01	Coordinator, Science Lab (50%)	Coordinator, Science Lab (100%)	\$32.72	Classified	\$34,028.80	\$22,669.09	\$56,697.89
0002	69	0101	Santa Rosa	02	01	Administrative Assistant II (80%)	Administrative Assistant II (100%)	\$21.39	Classified	\$10,951.68	\$17,942.90	\$28,894.58
0003	69	0101	Santa Rosa	02	01		Hort Tech (Greenhouse Facility Tech) (100%)	\$21.39	Classified	\$41,069.00	\$18,049.00	\$59,118.00
0004	60	0101	ALL	02	07		Coordinator-Special Projects and Grants	\$30.78	Classified	\$59,100.00	\$25,413.00	\$84,513.00
0005	69	0101	ALL	02	01		Wine Tech (100%) to support instruction	\$20.67	Classified	\$39,686.00	\$17,807.00	\$57,493.00

2.3a Current Contract Faculty Positions

Position	Description
Viticulture Instructor/Program Coord.(Dept Chair)	The full-time instructor has program coordination duties with disciplinary expertise in Viticulture. Coordinates closely with advisory committees and industry associations. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the Viticulture programs. Additionally, works with Shone Farm vineyard management personnel to coordinate the farming and development of a 70 acre (and growing) vineyard.
Agribusiness Instructor/Program Coordinator	New hire fall 2013, thus probationary tenure track faculty. The full-time instructor has program coordination duties with disciplinary expertise in agribusiness. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the agribusiness program. Additionally has a computer lab to coordinate in order to effectively serve student needs.
Natural Resources Instructor/Program Coordinator	The full-time instructor has program coordination duties with disciplinary expertise in Natural Resources Management. Coordinates closely with Advisory Committee and industry associations. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinate faculty and equipment needs for the natural resource programs. Additionally works with the Shone Farm Manager to oversee 120 acres of forest, an outdoor student lab.
Env Horticulture Instructor/Program Coordinator	The full-time instructor has program coordination duties with disciplinary expertise in Environmental Horticulture. Coordinates closely with advisory committee and industry associations. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinate faculty and equipment needs for the Environmental Horticulture programs. Additionally manages the greenhouse.
Veterinary Tech Instructor/Program Coordinator	The full-time instructor has program coordination duties with disciplinary expertise in Animal Health. Coordinates closely with Advisory Committees and industry associations. Maintains currency with state regulatory agencies. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the animal health programs. Working to acquire equipment and facilities to more effectively serve their student needs.

2.3b Full-Time and Part-Time Ratios

Discipline	FTEF Reg	% Reg Load	FTEF Adj	% Adj Load	Description
Agriculture	0.4000	37.0000	0.6700	63.0000	New SUSAG / AG program coordinator/instructor hired for 2011-2012. SUSAG Program was previously only staffed by adjuncts. There are two adjuncts in the AGRI program. The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.
Agriculture Business	1.0000	100.0000	0.0000	0.0000	New AGBUS hire for 2013-2014, all previous adjuncts were displaced by new hire. There are no adjuncts in the AGBUS program. The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.
Agriculture Mechanics	0.0000	0.0000	0.0000	0.0000	Ag/NR only teaches one AGMEC course (AGMEC 60) which was not offered this semester. The majority of AGMEC instructional activities are in the Industrial Trade Tech department.
Animal Health	0.4600	30.0000	1.0700	70.0000	Below district levels due to faculty being department chair. There are five adjuncts in ANHLT. The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.
Animal Science	0.0000	0.0000	0.8000	100.0000	Without full time program coordinators to coordinate facilities, supplies, equipment, adjuncts, and marketing of programs, growth of these programs is challenging. This discipline does not have any current faculty. There are four adjuncts in ANSCI. The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.
Environmental Horticulture	0.9800	52.0000	0.9600	48.0000	There are five adjuncts in HORT program. The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.
Equine Science	0.0000	0.0000	1.0500	100.0000	Without full time program coordinators to coordinate facilities, supplies, equipment, adjuncts, and marketing of programs, growth of these programs is challenging. No full time faculty. There are six adjunct faculty. The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.
Natural Resources	0.9600	35.0000	1.7900	65.0000	Compared with district levels. The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.
Sustainable Agriculture	0.4900	68.0000	0.2300	32.0000	The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.
Viticulture	0.8000	74.0000	0.2800	26.0000	There are two adjunct faculty in VIT program. The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.
Wine Studies	0.0000	0.0000	1.6700	100.0000	New full time instructor being hired for 14/15 academic year. There are ten adjunct in the WINE program. The calculations are based off spring 2014 rather than fall 2013 because it is a better representation of AG/NR programs.

2.3c Faculty Within Retirement Range

There are three faculty members under age 50, one faculty 50-54 years, and two faculty members 55 years or older. Anticipated retirements of two faculty members within the next 2 years will dramatically impact the Ag/NR Department if these specialty expertise positions are not replaced.

2.3d Analysis of Faculty Staffing Needs and Rationale to Support Requests

Faculty Recruitment:

The Ag/NR department has many programs; some are extremely difficult to recruit for due to the expertise required. Prior to the district wide course reductions, the department interviewed individuals for the adjunct pool on a yearly basis and more often if needed. Those disciplines, which require extensive specialty expertise, may only draw a handful of applicants to the pool. With budget and corresponding schedule reductions, the number of adjunct faculty given teaching assignments each semester continues to decline.

Full Time Equivalent Faculty

For the complexity of the programs offered in the Ag/NR Department, the department is understaffed. As of spring 2014, the department is operating with only six full time instructors. Each instructor is a program coordinator and most instructors are on overload. Prior to the budget reduction, the number of course offerings, adjuncts, programs, etc. grew considerably. In fact from 2004-2005 school year to the 2006-2007 school year, student head count increased by 12%. Even under course reductions, the department has increased FTES. In 2008-09, the department FTES increased 4.42%, in 2010-2011, the department FTES increased 4.69%. The extremely unfavorable ratio of full time to adjunct faculty impacts our department on a daily basis. Although the Ag/NR Department is not as large as some departments at SRJC, we are an exceptionally diverse and complex department made up of many areas of specialty expertise at many sites. The full time faculty serve as program coordinators and manage all of the department's activities detailed earlier. The obvious conclusion is that we desperately need additional full-time faculty to help with this load of work. We have many wonderful and dedicated adjunct faculty, but the reality is that they are paid only to teach their classes and hold student consultation hours. Accordingly, the department workload/program coordination falls to the full-time faculty. It should be noted that it is not only hard for faculty to undertake these responsibilities with excellence and vision, but a huge amount of effort is also necessary to coordinate the large number of adjunct faculty and carry out any effective policy changes. Being understaffed impacts us negatively, not only in how we perform our current tasks, but also in our ability to be progressive in serving the district.

Full Time Instructor/ Anchor Faculty Needs

Several of the Ag/NR programs do not have full time faculty. As of this moment, there is NO ONE with relevant expertise to understand and communicate how our Animal, Equine and Sus AG programs relate and connect to employment, transfer,

or other goals. Decisions are being made and current and potential students are being provided with inherently unqualified, incompetent information.

The Wine Studies position was staffed in Fall 2014 but there is an ongoing deficit for the Animal Science, Equine Science programs and now recently sustainable agriculture program with the departure of Robert Landry. The role of the full time instructor is to enhance the instructional program and ensure that courses are updated and curriculum is current and reflects industry need. Many of the Ag faculty who have classes at Shone Farm have the additional role of interfacing with Shone Farm management and staff. Ag instructors are also expected to participate in various Ag community events to promote their program in order to recruit students. Another important responsibility is to coordinate industry advisory committee for their discipline. Numerous individuals, representing industry, education, and non-profit organizations, contribute to the development of the programs in the Ag/NR Department at Santa Rosa Junior College. Having a full time instructor to manage a diverse network of practitioners in the classroom, field and industry is essential for growth of the program. Another key function of the coordinator is to respond to inquiries of potential students and outreach to high schools and other relevant groups. In addition to coordinating their program, faculty coordinators are expected to participate in Ag Trust and Shone Farm Foundation meetings. Without a full time instructor, it is very difficult to effectively sustain the viability of the instructional program, much less to grow it.

Faculty Staffing Priorities

The department had a full time reassignment in the Animal Science program in January 2014. This individual was also maintaining the Equine Science position. Sustainable Agriculture full time faculty resigned in Fall 2014 to take up another career opportunity elsewhere. An additional departmental retirement is anticipated in one year in the Environmental Horticulture program. There has also been an extremely strong increase in demand and enrollment for basic Agriculture courses. Accordingly, at the present time the department's top 3 rankings for faculty staffing requests are: 1. Animal/Equine Science, 2. Sustainable / General Agriculture and 3. Environmental Horticulture/Plant Science.

Animal and Equine Science

The Agriculture/Natural Resource Programs absolute top priority is replacing our Animal Science/Equine Science faculty member. This faculty member will coordinate two separate programs, which have a presence in both the Santa Rosa and Shone Farm campus. This is a replacement, not a growth position, as we have been without coordinators for these programs since the sudden resignation of the previous faculty member who held this position in January 2014. Prior to this resignation, this position had been filled full time for 35+ years.

Livestock (dairy, beef, and sheep) and equine industry is second only to wine industry in Sonoma County and the region and contributes immensely to the regional economy and employment. SRJC has a strong and renowned program in animal/equine science with excellent facilities at Shone Farm. The program has had tremendous success in education and training due to the quality of faculty we have had in the past four decades. Shone Farm serves as a practical learning laboratory with its beef cattle,

sheep and equine facilities, which will need the guidance and expertise of a full-time faculty to maintain and build on the legacy of excellence.

This position has program coordination duties for Animal and Equine Sciences. The full time instructional duties include, but are not limited to the following: develop up to date curriculum for use in traditional lecture lab formats as well as day and evening specialty short courses; act as a liaison to Shone Farm management and staff on behalf of the Animal and Equine Science instructors and students; schedule Animal and Equine Science courses to optimize student enrollment; provide recommendations for equipment and supplies acquisitions related to Animal and Equine Science; participate in selection, supervision, evaluation and coordination of Animal and Equine Science adjunct faculty and support staff; attend and participate in professional groups, seminars and activities to promote the Animal and Equine Science programs; effectively market the Animal and Equine Science programs for recruitment of appropriate students; and coordinate the Animal and Equine Science Advisory Committee.

If this position remains vacant then the quality of our program will continue to plummet due a lack of relevant expertise and staff time: Course content and SLOs will remain unevaluated, current and prospective students will lack valid guidance, the number of student success, transfer a completion will continue to decrease. In short, the validity and function of this program that is the traditional cornerstone of the Ag industry will profoundly suffer.

Sustainable Agriculture / General Agriculture:

The sudden departure of the full-time faculty in sustainable and general agriculture two weeks prior to start of Fall 2014 semester caught the department off-guard. This was a critical position that was filled in Fall 2011 and meets the teaching needs in key growth areas of the department. Sustainable Agriculture has seen consistent growth in enrollment and FTES even during the recession times and has shown an accelerated demand in recent years. The award of NSF grant for developing pathways in sustainable agriculture education has provided a boost to the program which has conducted Summer Academy in Sustainable Agriculture (SASA) for three years in a row to high school students. General agriculture courses (AGRI 20, AGRI 60 and AGRI 70) taught by this faculty has shown high enrollment efficiency (90%+) and we opened multiple sections of AGRI20 and AGRI 60 in the past two semesters. Due to the high job growth rate and emphasis on sustainability in agriculture, high demand for the course offerings as demonstrated by enrollment efficiency, this full-time position is most critical for the future of the department.

Environmental Horticulture

Increased interest in the quality of the environment, conservation, and restoration projects has stimulating growth in the horticulture industry over the last several years. California's environmental horticulture industry leads the nation with 21.9% of total nursery production and 8.6% of lawn and garden retail sales. California represents over a quarter of U.S. wholesale nursery production and retail sales, creating 192,065 California jobs- 74,940 jobs come from production, 76,225 jobs from lawn and garden

retailing, and 40,900 result from indirect and induced effects. The total payroll exceeds \$5.58 billion, with \$2.52 billion from floral and nursery production and over \$3.05 billion from lawn and garden retailing. Combined, nursery and floriculture are California's #2 agricultural commodity, producing 9.1% of the state's total agricultural output. Nursery products, flowers and foliage are produced in 55 of California's 58 counties. Nursery stock is a number one crop for 12 California counties, reporting sales of over \$100 million/county.

Nevertheless, due to the economic downturn, particularly in the construction industry, the current job market is difficult. EDD labor market information data projects a 9.6% increase in Landscaping and Groundskeeper Supervisor positions for 2008-2018 in California and a 9% increase in Sonoma County. For Landscape Groundskeepers and Workers, the projection is a 14% increase in California and a 14% increase in Sonoma County.

The employment outlook for the category of Farmworkers, Laborers, Crop and Nursery Workers in California is flat with a -.1% change. In Sonoma County, a 4.49% increase is projected. The Environmental Horticulture Advisory Committee confirmed the weakening job market in the nursery industry and the value and need for the two nursery certificates will be assessed in the coming year.

Longer term, as the economic recovery continues, the landscape field should strengthen. Private and commercial property values are enhanced by professionally designed landscapes, and the services of large and small landscape firms should return to be in high demand. In addition, a significant number of independent, entrepreneurial landscape/garden designers offer services throughout the county.

Graduates who possess landscape management skills are qualified to advance into supervisory and management positions within landscape contracting firms, design or landscape construction companies, municipal, state, county, and federal agencies, entrepreneurial landscape maintenance enterprises, and other occupations that require the application of plant knowledge, drafting/design, irrigation design, and landscape construction skills.

There are multiple areas that offer interesting employment options and starting pay to students who are prepared by SRJC's Environmental Horticulture program, including:

- Wholesale nursery propagator (\$15-40/hr)
- Wholesale nursery grower (\$10-25/hr)
- Field Superintendent Manager (\$30-45/hr)
- Sales Manager (\$15-20/hr)
- Marketing Manager (\$20-30/hr)
- Floral Designer (\$35-50/hr)
- Landscape Contractor (\$50-80/hr)
- Landscape Designer (\$35-75/hr)
- Irrigation Designer (\$75/hr)
- Private Horticulture Consultant (\$50/hr)
- Certified treeworker (\$25-40/hr)
- Park Superintendent (\$35-50/hr)
- Landscape Estimator (\$50/hr)
- Foreperson (\$10-22/hr)
- Crew Leader (\$10-22/hr)
- Landscape Gardener(\$10-15/hr)
- Salesperson (\$15-20/hr)
- Integrated Pest Management specialist (\$50-70/hr)
- Salesperson retail florist (\$20-35/hr)
- Instructor (\$30-50/hr)
- Landscape Design Assistant (\$15-20/hr)

- Project Supervisor (\$20-30/hr)

The variation of salaries is dependent upon the level of education, type of employment, specific job tasks and skills. Experienced workers typically earn \$10-22 /hr.

Management and supervisory positions have the greatest earning at \$3,500 to \$5,500 per month. Owners/operators of many landscape maintenance businesses earn between \$4,500-8,500 per month. Many residential landscape installation contractors earn between \$150,000 -500,000 per year, gross income.

2011-2012 SRJC data for the Environmental Horticulture program is as follows:

Environmental Horticulture Headcount (first census): 221

Environmental Horticulture Enrollment Efficiency: 82.15%

Environmental Horticulture Average Class Size: 20.8

Environmental Horticulture Productivity: 12.77

Environmental Horticulture Retention: 75.5%

Environmental Horticulture Successful Course Completion: 68.45%

2.3e Faculty Staffing Requests

Rank	RS	ACTV	Location	SP	M	Discipline	SLO Assessment Rationale
0001	69	0101	ALL	00	00	Animal/Equine Science	This will be the only and anchor faculty with the expertise in these disciplines. No one else has the specialty area expertise to evaluate student learning within this discipline. Currently the position is vacant for more than a year due to the resignation of the permanent faculty in Fall 2013.
0002	69	0101	ALL	00	00	Sustainable/General Agriculture	Following the resignation of Sustainable / General Agriculture instructor in August 2014, this will be the only and anchor faculty with the experience in these disciplines. No one else has the specialty area expertise to evaluate student learning within this discipline.
0003	69	0101	ALL	00	00	Environmental Horticulture / Plant Science	Following the retirement of the current Horticulture instructor, this will be the only and anchor faculty with the expertise in these disciplines. No one else has the specialty area expertise to evaluate student learning within this discipline.
0004	69	0101	ALL	00	00	Forestry/Hydrologist	With the current faculty going on reduced load of the current Forestry/Hydrology instructor, this will be the only and anchor faculty with the expertise in these disciplines. No one else has the specialty area expertise to evaluate student learning within this discipline.

2.4b Rational for Instructional and Non-Instructional Equipment, Technology, and Software

There are 9 different programs offering 30 certificates and 15 associate degrees in the Ag/NR Department. All the instructional programs in the Ag/Natural Resources Department are heavily dependant upon equipment and farm machinery which tend to be very costly. The equipment needs are diverse, ranging from wine lab equipment used in the Wine Studies program to machinery needed for large crop production by students in the Sustainable Agriculture program. Students must learn using state-of-the art tools and machinery similar to equipment used in the Agriculture/Natural Resources industry. Accordingly, there is a need to continually replace and acquire new equipment whether it is used in the classroom or at Shone Farm. The lengthy Instructional Equipment Request list, outlined in 2.4c, is illustrative of the equipment intensive programs in the Ag/Natural Resources Department. The rationale for all equipment requests is that existing equipment is worn out, out of date, or inadequate. Everything requested is necessary to continue to the Ag/NR Instructional programs at the caliber expected.

SLOs/courses for the following items:

Rank 1) Portable Fertigation System: This instrument will serve both the Agriculture and Sustainable Agriculture Program Certificate and Major for class activities related to the following classes: AGRI 60, AGRI 20, SUSAG 109, SUSAG 64, SUSAG 65, and will support SLO's for these classes.

Rank 2) Soil Mixer and Soil Sterilizer: This will be used in the following classes and support the listed SLOs: Hort 71 - Objective #4: explain & evaluate commercial production medias. Hort 80 - Objective #7: maintain & improve soil/media conditions for proper plant growth. Hort 72 - Objective #10: ID & properly utilize a variety of growing medias. Hort 70 - Objective #2: select & use common soil media for commercial plant propagation.

Rank 3) Brush Chipper: This will be used in the following classes and support the listed SLOs: NRM 70 - SLO: #3. To know procedures in timber stand thinning (Forestry), NRM 131 - SLO: #8. Construct a section of trail, NRM 111 - SLO: #6. Manage and maintain wildland recreation areas and facilities to ensure visitor satisfaction and safety.

Rank 4) Veterinary Intra Ocular Pressure Devices: This tool will support the SLOs of the Veterinary Technician Certificate. Specifically it will be used during in class activities and support the SLOs of AnHlt120 and AnHlt151 to a major extent and AnHlt50 to a minor extent.

Rank 5) Felcore Pruners with Holsters and Safety Goggles. These items will be used and support the SLOs in the following courses: Vit 52 SLO # 3, Vit 120 SLO #1, Vit 121 SLOs #1 and #3, Vit 123 SLO #3

2.4c Instructional Equipment Requests

Rank	RS	ACTV	Location	SP	M	Item Description	Qty	Cost Each	Total Cost	Requestor	Room/Space	Contact
0001	69	0111	Shone Farm	02	01	Portable Fertigation System	1	\$2,500.00	\$2,500.00	SUSAG		Robert Landry
0002	69	0109	Santa Rosa	02	01	Soil Mixer and Soil Sterilizer	1	\$2,150.00	\$2,150.00	HORT & SUSAG	Lark Hall	PJ LoCoco & Robert Landry
0003	69	0114	Shone Farm	02	01	Brush Chipper	1	\$35,000.00	\$35,000.00	Natural Resources		Leonard Diggs
0004	69	0107	ALL	02	01	Veterinary Intra Ocular Pressure Devices	2	\$3,000.00	\$6,000.00	Vet Tech		Dan Famini
0005	69	0112	Shone Farm	02	01	Felco Pruners with Holster and Safety Goggles	24	\$80.00	\$1,920.00	Viticulture		Merilark Padgett-Johnson
0006	69	0108	Shone Farm	02	01	Portable Livestock Scale	1	\$1,000.00	\$1,000.00	Animal Science		Casey Cole
0007	69	0110	Shone Farm	02	01	Therapeutic Riding Equipment	1	\$5,000.00	\$5,000.00	Equine Science		Casey Cole
0008	69	0105	Santa Rosa	02	01	Digital SLR Camera & Laptop-Outreach Presentation	1	\$1,000.00	\$1,000.00	AgBus		George Sellu
0009	69	0109	Santa Rosa	02	01	Lopping Shears	5	\$35.00	\$175.00	Environmental Horticulture	Lark Hall	PJ LoCoco
0010	69	0109	ALL	02	01	Upgrade Horticulture EaglePoint LANDCAD Software	1	\$5,000.00	\$5,000.00	Environmental Horticulture	Lark 2060	PJ LoCoco
0011	69	0107	Santa Rosa	02	01	Refractometer	2	\$200.00	\$400.00	Vet Tech		Dan Famini
0012	69	0112	Shone Farm	02	01	Leaf Pressure Chamber	1	\$3,500.00	\$3,500.00	Viticulture		Merilark Padgett-Johnson
0014	69	0109	Santa Rosa	02	01	2014 Sunset Western Garden Book	24	\$40.00	\$960.00	Environmental Horticulture	Lark Hall	PJ LoCoco
0017	69	0110	Shone Farm	02	01	Portable Ramp for therapeutic Riding	1	\$5,000.00	\$5,000.00	Equine Science		Casey Cole
0018	69	0101	ALL	02	01	Tablet Computers for in class group work	12	\$300.00	\$3,600.00	AG/NR		Dan Famini
0019	69	0107	Santa Rosa	02	01	Replacement Wine Tasting Spiegelau glass (12/case)	15	\$500.00	\$7,500.00	Wine Studies		Casey Cole
0020	69	0111	Shone Farm	02	01	Cultivating Tractor	1	\$7,500.00	\$7,500.00	SUSAG, AGMEC		Leonard Diggs
0022	69	0101	Santa Rosa	02	01	Dissecting Microscopes	5	\$599.00	\$2,995.00	Vet Tech, An Sci, Eq Sci		Dan Famini
0023	69	0101	Santa Rosa	02	01	Magnum Prox9 airless paint sprayer	1	\$649.00	\$649.00	Env Hort		Pj Lococo
0024	69	0107	ALL	02	01	autoclave	1	\$2,500.00	\$2,500.00	Vet Tech		Dan Famini
0025	69	0107	ALL	02	01	Circulating water heating pad	2	\$500.00	\$1,000.00	Vet Tech		Dan Famini
0026	69	0107	Santa Rosa	02	01	Surgical Table	1	\$1,400.00	\$1,400.00	Vet tech		Dan Famini
0027	69	0107	ALL	02	01	Surgical Light	1	\$500.00	\$500.00	Vet Tech		Dan Famini
0028	69	0107	ALL	02	01	Emergency Crash Kit	1	\$400.00	\$400.00	Vet Tech		Dan Famini
0029	69	0108	Shone Farm	02	01	3D Cow Model	1	\$3,250.00	\$3,250.00	Animal Sci, Vet Te		Casey Cole
0030	69	0107	Santa Rosa	02	01	Controlled drug cabinet	1	\$400.00	\$400.00	Vet Tech		Dan Famini
0031	69	0107	ALL	02	01	EKG	1	\$400.00	\$400.00	Vet Tech		Dan Famini
0032	69	0107	ALL	02	01	Holding cages/kennels	4	\$1,000.00	\$4,000.00	Vet Tech		Dan Famini

0033	69	0107	ALL	02	01	dental machine	1	\$2,500.00	\$2,500.00	Vet Tech		Dan Famini
0034	69	0107	ALL	02	01	tonometer	1	\$3,000.00	\$3,000.00	Vet Tech		Dan Famini
0035	69	0107	ALL	02	01	syringe pump	1	\$900.00	\$900.00	Vet Tech		Dan Famini
0036	69	0107	ALL	02	01	BAIR hugger warming unit	1	\$350.00	\$350.00	Vet Tech		Dan Famini
0037	69	0107	ALL	02	01	ultrasonic instrument cleaner	1	\$200.00	\$200.00	Vet Tech		Dan Famini
0038	69	0114	Shone Farm	02	01	Timber Carrier	2	\$100.00	\$200.00	Natural Resources		Kasey Wade
0039	69	0109	Santa Rosa	02	01	Premium light meter	1	\$500.00	\$500.00	Env Hort		Pj Lococo
0040	69	0109	Santa Rosa	02	01	Replace brakes on battery operated equipment cart	1	\$849.00	\$849.00	Env Hort		Pj Lococo
0041	69	0000	Shone Farm	02	01	Forestry Field "Cruiser Vests"	6	\$48.95	\$293.70	Natural Resources		Kasey Wade
0042	69	0108	Shone Farm	02	01	Livestock breed replacement	1	\$200,000.00	\$200,000.00	Animal Sci, Equine Sci, Vet Te		Casey Cole
0044	69	0107	ALL	02	01	Blood Mixer/Rocker	1	\$350.00	\$350.00	Vet Tech		Dan Famini
0046	69	0108	ALL	02	01	Artificial insemination breeding supplies	1	\$5,000.00	\$5,000.00	Animal Sci, Equine Sci, Vet Te		Dan Famini
0047	69	0109	Santa Rosa	02	01	Replace outdated soil/media sterilizer	1	\$3,750.00	\$3,750.00	Env Hort		Pj Lococo
0048	69	0111	Shone Farm	02	01	Wheelbarrows (flat front)	3	\$272.00	\$816.00	Sustainable Ag		Leonard Diggs
0050	69	0111	Shone Farm	02	01	Greenhouse Bench Warmer	4	\$1,000.00	\$4,000.00	SUSAG		Robert Landry
0051	69	0111	Shone Farm	02	01	Rain Storage Tank	5	\$2,500.00	\$12,500.00	SUSAG		Robert Landry
0052	69	0111	Shone Farm	02	01	Ladibug DC-192 HD Po	1	\$900.00	\$900.00	SUSAG		Robert Landry
0053	69	0106	Santa Rosa	02	01	Nikon Microscopes E10	24	\$1,250.00	\$30,000.00	AGRI/ANSCI		Dan Famini
0054	69	0106	Santa Rosa	02	01	Botany Slide Set	24	\$150.00	\$3,600.00	AGRI/ANSCI		Dan Famini
0055	69	0109	Santa Rosa	02	01	Large Format Copier Need new	1	\$13,750.00	\$13,750.00	Env Hort/Agri		Pj LoCoco
0056	69	0112	Shone Farm	02	01	Leaf Porometer	1	\$2,500.00	\$2,500.00	Viticulture		Merilark Padgett-Johnson
0057	69	0114	Shone Farm	02	01	Pulaski-Forester Axe	5	\$57.50	\$287.50	Natural Resources		Kasey Wade
0058	69	0109	Santa Rosa	02	01	Light Meter	1	\$500.00	\$500.00	Env Hort/Agri		Pj LoCoco
0059	69	0112	Shone Farm	02	01	Hand held pH meters	15	\$45.00	\$675.00	VIT & SUSAG		Merilark Padgett-Johnson & Robert Landry
0060	69	0107	ALL	02	01	Veterinary Ultrasound - Refurbished	1	\$8,000.00	\$8,000.00	Vet Tech		Dan Famini
0061	69	0111	Shone Farm	02	01	60 Gallon Cyclone Compost Tea Brewer	1	\$1,900.00	\$1,900.00	SUSAG		Robert Landry
0062	69	0106	Shone Farm	02	01	Mazzei Fertilizer Injectors	6	\$200.00	\$1,200.00	AGRI		Robert Landry
0063	69	0111	Shone Farm	02	01	Irrrometer Soil Tensiometers and Service Kit	1	\$800.00	\$800.00	SUSAG/AGRI		Robert Landry
0064	69	0114	Shone Farm	02	01	Eight-foot Picnic Table with attached Food Locker	1	\$845.00	\$845.00	Natural Resources		Kasey Wade
0065	69	0114	Shone Farm	02	01	Eight Foot Picnic Table	2	\$550.00	\$1,100.00	Natural Resources		Kasey Wade
0066	69	0108	Shone Farm	02	01	Cattle Soft Ropes and Web Halter	10	\$100.00	\$1,000.00	Animal Science		Dan Famini

0067	69	0108	Shone Farm	02	01	Sheep Creep Gate (1 Small and 1 large)	2	\$300.00	\$600.00	Animal Science		Dan Famini
0068	69	0108	Shone Farm	02	01	Heat Lamp, Auto Waterers, Auto Waters W/Hoses	4	\$500.00	\$2,000.00	Animal Science		Dan Famini
0069	69	0110	Shone Farm	02	01	Saddles	16	\$150.00	\$2,400.00	Equine Science		Dan Famini
0070	69	0113	Shone Farm	02	01	Ammonium Ion-Selective Electrode	5	\$179.00	\$895.00	Wine Studies		Dan Famini

2.4d Non-Instructional Equipment and Technology Requests

Rank	RS	ACTV	Location	SP	M	Item Description	Qty	Cost Each	Total Cost	Requestor	Room/Space	Contact
0001	69	0101	ALL	02	01	12-passenger vans for student field trips, etc.	2	\$30,000.00	\$60,000.00	Department Chair		Dan Famini
0002	69	0114	Shone Farm	02	01	Feather Lite Passenger Tram Trailer	1	\$21,000.00	\$21,000.00	NRM		Kasey Wade
0003	69	0101	Santa Rosa	02	01	10x12 Storage Shed	1	\$3,000.00	\$3,000.00	Dan Famini		Dan Famini
0004	69	0114	Shone Farm	02	01	4x4 Truck	1	\$20,000.00	\$20,000.00	NRM		Kasey Wade
0005	69	0101	Santa Rosa	02	01	Storage Cabinet for draft table lamps	1	\$1,000.00	\$1,000.00	PJ LoCoco	Lark	Pj LoCoco
0006	69	0114	Shone Farm	02	01	Shuttle Bus	1	\$30,000.00	\$30,000.00	NRM		Kasey Wade
0007	69	0101	Santa Rosa	02	01	30 drafting tables, lamps and adjustable chairs	1	\$11,250.00	\$11,250.00	PJ LoCoco	2086 Lark	Pj LoCoco

2.4e Safety, Utility, and ADA Impacts

All facilities are ADA compliant.

Environmental Horticulture Greenhouse and Nursery Compound (Santa Rosa)

The greenhouse/nursery compound on campus has been in disrepair and neglect after 34+ years of operation. The unit still serves over 500 students yearly in a myriad of horticultural classes but has not had any significant capital improvements to the facility since the unit was built with the construction of the Lark Hall facility. There are a number of issues that if, not addressed, present safety concerns (ie. slip and trip hazards). The compound is ill suited for the commercial cultural practices associated with the nursery operations such as planting, thinning, transplanting, potting, and other operations.

2.5a Minor Facilities Requests

Rank	RS	ACTV	Location	SP	M	Time Frame	Building	Room Number	Est. Cost	Description
0001	69	0101	Santa Rosa	04	01	Urgent	Lark Hall Ag Student Lounge	2088	\$5,000.00	Remodel student lounge to convert into student study area.
0002	69	0101	Santa Rosa	04	01	Urgent	Lark Greenhouse		\$35,500.00	Upgrades to current environmental horticulture greenhouse- Reglaze glass with twin wall polycarbonate panels.
0003	69	0111	Shone Farm	04	01	Urgent	Shone Farm		\$3,000.00	SUSAG shed
0004	69	0101	Shone Farm	04	01	Urgent	Shone Farm		\$25,000.00	Office space with instructional equipment storage at Shone Farm.
0005	69	0101	Santa Rosa	04	01	Urgent	Lark	Central Supply	\$50,000.00	Remodel Central Supply. Additional space needed for storage of supplies/equip
0006	69	0101	Santa Rosa	04	01	Urgent	Lark Greenhouse		\$1,200.00	Greenhouse vent screens to reduce insect problems and pesticide use.
0007	69	0101	Santa Rosa	04	01	Urgent	Lark Nursery		\$12,500.00	See Paul Bielen's estimate from Contractor, \$2500 JC plus \$10,000 contractor. Replace deteriorated nursery shade structure. Install recycled 6x6 posts (Facilities will provide) & install new custom shade cloth and polycarbonate panels (purchased with Ag Trust \$\$ 09-10).
0008	69	0101	Santa Rosa	04	01	2-3 Yr			\$0.00	New CAD lab to be shared by EH, NRM, and ApTech
0009	69	0101	Santa Rosa	04	01	Urgent	Lark		\$150,000.00	Wine Evaluation Lab
0010	69	0101	Santa Rosa	04	01	Urgent	TBD		\$300,000.00	Construction of a veterinary laboratory
0011	69	0101	Santa Rosa	04	01	Urgent	Shone Farm		\$10,000.00	Establish leadership retreat trail; ropes course NRM
0012	69	0101	Santa Rosa	04	01	1 Year	Lark	2086	\$9,350.00	Reconfigure Lark 2086 to teach drafting. Remove permanently affixed tables and replace with new tables, chairs, etc. suitable for drafting.
0013	69	0101	Santa Rosa	04	01	Urgent	Lark	2091-2099	\$8,500.00	Remodel, renovate, Lark AG/NR offices to include replacing office suite carpets, blinds, repainting
0014	69	0101	Santa Rosa	04	01	Urgent	Lark		\$100,000.00	Enlarge access area to central supply and classrooms for loading/unloading and for outside storage
0015	69	0101	Santa Rosa	04	07	Urgent	Lark Hall		\$5,000.00	Converting office lobby to accommodate administrative assistants
0016	69	0101	Santa Rosa	04	01	1 Year	Lark Greenhouse		\$650.00	Replace peg board and tool hangers. Replace rotting boards-safety issue
0017	69	0101	Santa Rosa	04	01	1 Year	Lark Greenhouse		\$500.00	Peg board hand tool hangers. Safely hang landscape tools
0018	69	0101	Santa Rosa	04	01	Urgent	Lark Greenhouse		\$54,700.00	Upgrades to current environmental horticulture greenhouse- Resurface concrete floor (slip and fall hazard).
0019	69	0101	Santa Rosa	04	01	1 Year	Lark Greenhouse		\$8,000.00	Upgrade supply, tool & equipment storage with new 10x12 shed (plus concrete pad) & new 12x20 shed (plus concreted pad
0020	69	0101	Santa Rosa	04	01	1 Year	Lark Greenhouse		\$150.00	Install electronics leaf mist controller.

2.5b Analysis of Existing Facilities

Existing facilities are accessible to disabled students and staff, and comply with ADA requirements.

Environmental Horticulture Greenhouse/Nursery Compound

The greenhouse/nursery compound *on campus* has been in disrepair and neglect after 34+ years of operation. The unit still serves over 500 students yearly in a myriad of Environmental Horticultural classes, but has not had any significant capital improvements to the facility since the unit was built with the construction of the Lark Hall facility. Due to the delapidated conditions of this unit, serious safety issues have arisen, including student trip and slip hazards, structural collapse and other hazards associated with a glass enclosed compound. The compound is ill suited for the commercial cultural practices associated with the nursery operations such as planting, thinning, transplanting, potting, and other operations. The unit is in need of equipment associated with the nursery operations as well as the landscaping operations conducted on campus.

The Environmental Horticulture Advisory Committee has proposed a design for construction of a new 50,000 square foot Environmental Hort facility to include a commercial greenhouse, covered outdoor instructional area, covered multiple use and storage area, nursery growing grounds, nursery storage, retail sales area, arboretum/outdoor demo garden and plant lab, landscape buffer and vehicle access and circulation area. A Facilities Project Proposal was submitted in October 2007. This new facility would provide more than twice the space of the current facilities. However, it would be smaller than the average horticulture unit among five California community college Environmental Horticulture Programs surveyed, most of which have smaller horticulture enrollments than SRJC. This new state-of-the art horticulture/nursery facility, which would meet the needs of horticulture students for the next several decades.

Pending construction of a new facility, the faculty have identified several smaller, yet critical projects that need completion, e.g. upgrades in the greenhouse and replacement of the nursery shade structure.

Lecture/Laboratory Classrooms

Over 3759 students in the department, and seven full time instructors and over 50 adjunct instructors per semester, utilize the laboratory classrooms in the Lark Hall complex. The classrooms are used from early in the morning to late at night with classes ranging from Soil Science to Vet Practices to Sensory Evaluation of Wines. The classrooms surround a "Central Supply" area which houses laboratory supplies and equipment for the instructors. Thirty four years ago the layout of the complex was one of the best-designed occupational learning facilities in the state of California. But, as teaching styles change over the years, facilities should change to accommodate innovations in instruction. The thirty four year old classrooms need major remodeling for whiteboards, new movable workstations and seating, and enhanced lighting. A new laboratory classroom has been added to the facilities request to address student growth requirements in the Lark classroom area.

Vet Tech lab

The Vet Tech program coordinator has identified a need for students to have much more hands-on instruction in a lab setting. Currently the program coordinator uses a variety of rooms at any given moment. On a typical semester the courses are spread across 6 classrooms (3 on each Santa Rosa and Petaluma Campus) with equipment being transported to each class session. This limits the capacity and quality of the program due to both logistical/transport issues and the very significant time demand on the coordinator which prohibits other activities from being accomplished.

3.1 Diversify Funding - Grants/Contracts

3.2 Cultural Competency

- The AG/NR Department recruits faculty, both contract and adjunct who are sensitive to the diversity of our students and community.
- The program works collaboratively with Human Resources in advertising and marketing to diverse populations.
- The AG/NR Department works with advisory committees, industry and community groups to foster diversity in employment opportunities with our CTE programs.
- The Viticulture program works collaboratively with the Sonoma County Grape Growers with a pilot program called “Workforce Training for Hispanic Workers” to gain upward mobility in management.
- The Ag/NR Department is participating in a US Department of Agriculture grant to train and mentor new farmers and ranchers, with the University of California Cooperative Extension and the Latino Service Providers.

3.3 Professional Development

The program encourages and grants release time for professional development, safety training, occupational workshops and software seminars for classified staff.

3.4 Safety and Emergency Preparedness

Debbie Eakins is the Ag/NR safety leader. Debbie ensure that all facets of departmental safety and emergency preparedness are maintained including: MSDS, first aid kits, respirators, seismic preparedness, etc...

Chris Wills is the Shone Farm safety leader.

3.5 Sustainable Practices

As farmers and ranchers the Ag/NR Department has an intimate daily relationship with the land, water and air. The land is both our love and our livelihood. Our job is to care for the land, and when we do that well, the land takes care of us.

Accordingly, the Ag/ NR Department engages in an infinite number of sustainable practices, such as:

- Composting
- Rain water harvesting
- Cover crops
- Organic produce production
- Pasture rotation
- Polyculture
- Local marketing via farmers markets, Community Supported Agriculture, SRJC cafeteria, etc...
- Biological pest control
- Crop rotation
- Hedgerows
- Bioswales
- Invasive species reduction

As a result of many of these practices, Shone Farm Vineyards were Certified Sustainable in 2008 and the demonstration and sauvignon blanc blocks were Certified Organic by CCOF.

Students are exposed to all these practices in class as well as in outside endeavors by faculty, such as the student organization, Students for Sustainable Communities (SSC), which is co-advised by Ag/NR faculty member Kasey Wade. This organization that coordinates the sustainability activities of college clubs has been recognized for its efforts as the recipient of the “Best Practice Award” at the 2010 Higher Education Sustainability Conference. Its members have also received other awards for their sustainability practices and efforts, such as:

- Instrumental in getting the college to endorse the Talloires Declaration; collaborated with administration, faculty and staff to make this important signing happen on April 20th, 2011.
- Conducted two successful waste audits on the Bertolini Student Center food waste containers.
- Created the “Green Squad,” an educational team making students and staff aware of the appropriate use of waste receptacles in the Bertolini Student Center Dining Commons.
- Students have led Professional Development workshops for faculty and staff to engage them in discussion on how to make the campuses more sustainable.

In 2011, another new Agriculture/Natural Resources student organization emerged, The Sustainable Agriculture Club. The mission of SRJC’s Sustainable Agriculture club is to support the learning and implementation of sustainable agricultural practices among the

community, provide an academic resource for students, and to promote SRJC's Sustainable Agriculture program.

Another sustainable practice facilitated by the Ag/NR Department is the propagation of oak seedlings. To emphasize the importance and value of the spectacular oak trees that inhabit SRJC, the Ag/NR Department propagates oaks seedlings that each student who graduates at the annual May commencement ceremony receives.

Recent grant we have applied for that demonstrate our commitment to sustainable practices include:

- USDA-Farmers Market Program Promotion, \$65,719 (completed in September 2012)
- Summer Ag Academy for Sustainable Agriculture, \$20,914 (completed in August 2012)
- NSF-ATE grant for "Improving Pathways in Sustainable Agriculture Education for the North Bay Region of California", \$200,000 (July 1, 2013 - June 30, 2016)
- Beginning Farmers and Ranchers Development Program, \$269,626 (Oct 2011-August 2014)
- USDA Specialty Crops Block Grant Program "Training the Next Generation of Farmers for the Growing California Oil Oil Industry", \$385,211 (October 2013 - June 2016)
- USDA Specialty Crops Block Grant Program "Innovative Specialty Crops Oriented Program In Education", \$385,925 (October 2013-June 2016)

Departmentally we are committed to the reduce, reuse, recycle philosophies behind the sustainable movement. Accordingly, we recycle "disposable" items, reduce our paper use and reuse instructional materials where ever possible. To further reduce our carbon footprint, with funding, departmentally we would like to secure a biodiesel vehicle to assist in carpooling students to and from Shone Farm.

4.1a Course Student Learning Outcomes Assessment

The Agriculture and Natural Resources Department Six Year plan for assessment has the majority of the courses being completed this Spring 2014. The department intends to continue assessing on a six year cycle as indicated in the chart below.

Course	Semester Initiated or to be Initiated	Semester Completed	Year of Next Assessment	Comments
AGBUS 107			Inactivate	Inactivate
AGBUS 2	F2011	F2011	F2015	
AGBUS 51	S2014	S2014	S2018	
AGBUS 52	S2014	S2014	S2018	
AGBUS 56	S2012	F 2013	F2019	
AGBUS 61	S2014	S2014	S2018	
AGBUS 62	S2014	S2014	F2017	

AGBUS 7	S2012	S2012	F2016	
AGBUS 71	F2015		F2015	Reactivated course in 2013
AGMEC 163	F2014		F2014	
AGMEC 60	F2014		F2020	
AGRI 10	F 2014		F2020	
AGRI 20	S 2012	S 2012	F2018	
AGRI 50			Inactivate	Inactivate
AGRI 56	F2014		F2014	
AGRI 60	F 2011	F 2011	F 2017	
AGRI 70	S2014	S2014	F 2020	
ANHLT 109	F2014		F2016	
ANHLT 120	F 2011	F2011	F2015	
ANHLT 121	S2014	S2014	F2016	
ANHLT 123	S2018		S2018	
ANHLT 126	S2015	S2015	S2017	
ANHLT 141	S2013	S2013	S2016	
ANHLT 142	S2014	S2014	F2017	
ANHLT 151	F 2012	F2012	S2016	
ANHLT 161	S2017		S2017	
ANHLT 50	S2012	S2012	F2015	
ANHLT 52	F2014	F2014	F2017	
ANSCI 153	F2014		F2016	
ANSCI 171	F2014		F2020	
ANSCI 2	S2011	S2011	S2018	
ANSCI 20	F 2011	F2011	F2017	
ANSCI 26	S 2012	S2012	S2018	
ANSCI 27	S 2011	S2011	S2016	
ANSCI 28	S2016		S2016	
ANSCI 29	F2015		F2015	
ANSCI 50	F2012	F2012	F2016	
ANSCI 51	F2014	F2014	F2018	
ANSCI 61	F2013	F2013	F2015	
ANSCI 91	S2015		S2017	
EQSCI 101	S2014	S2014	S 2019	
EQSCI 102A	S2014	S2014	S 2019	
EQSCI 102B	F2014	F2014	Inactivate	Inactivate
EQSCI 102C	F2014	F2014	Inactivate	Inactivate
EQSCI 120	S2015		S2015	
EQSCI 121	F 2015		Inactivate	Inactivate
EQSCI 122	F 2015		Inactivate	Inactivate
EQSCI 125	S 2016		Inactivate	Inactivate
EQSCI 151	S 2016		S 2016	
EQSCI 162	S 2016		Inactivate	Inactivate
EQSCI 170	F 2014		F 2020	
EQSCI 180	F 2015		Inactivate	Inactivate
EQSCI 25	F2014		F2014	
EQSCI 51	F 2011	F 2011	Inactivate	Inactivate
EQSCI 52	S2014	S2014	S 2019	
EQSCI 53	S2014	S2014	S 2019	

EQSCI 60			Inactivate	Inactivate
EQSCI 80	S 2015		Inactivate	Inactivate
HORT 110	F 2013	S2013	F 2020	
HORT 111	F2020		F 2020	
HORT 112	F 2013	F2013	S 2021	
HORT 115			Inactivate	Inactivate
HORT 115.1			Inactivate	Inactivate
HORT 119	S2014	S2014	F 2019	
HORT 12	S 2013	S2014	S 2016	
HORT 151	F 2013	F2013	F 2018	
HORT 153	F2015		F2015	
HORT 171	S 2013	F 2013	F 2018	
HORT 180	S2014	S2014	S 2019	
HORT 181	S2012	S2012	F 2018	
HORT 189	S 2014	S2014	S 2019	
HORT 195A	S 2014	S2014	S 2020	
HORT 195B	S 2014	S2014	S 2020	
HORT 195C	S 2014	S2014	S 2020	
HORT 50.1	S 2011	S2011	F 2017	
HORT 50.2	F 2012	S2013	F 2016	
HORT 56	F2015		F2015	
HORT 65	F 2012	F2012	F 2015	
HORT 66	S 2013	F2013	S 2017	
HORT 70	S 2013	S2013	S 2017	
HORT 71	F 2012	S2013	F 2015	
HORT 72	S 2014	S2014	S 2016	
HORT 8	F 2013	F 2014	F 2015	
HORT 80	S 2012	S2012	S 2018	
HORT 81			Inactivate	Inactivate
HORT 82			Inactivate	Inactivate
HORT 82.1			Inactivate	Inactivate
HORT 91	F 2012	S2012	F 2017	
HORT 92.1	S 2013	S2013	S 2016	
HORT 92.2	S2013	S2013	F 2017	
HORT 93	F2011	F2011	F 2019	
HORT 94	S2014	S2014	S 2021	
NRM 102			Inactivate	Inactivate
NRM 103	S2014	S2014	S2020	
NRM 110			Inactivate	Inactivate
NRM 111	F2014	F2014		
NRM 12	S2010	S2010		
NRM 121	F2016	NA	Inactivate	Inactivate
NRM 131	S2013	S2013	Sum2015	
NRM 132	S2014	S2014	S2020	
NRM 141	S2014	S2014	S2020	
NRM 142	S2015	NA	S2015	
NRM 51	S2011	S2011	S2015	
NRM 56	S2015		S2015	
NRM 60	S2012	S2012	S2018	
NRM 61			Inactivate	Inactivate

NRM 63	F2011	F2011	F2017	
NRM 65			Inactivate	Inactivate
NRM 66	S2012	S2012	S2016	
NRM 67	F2014	F2014	F2018	
NRM 70	F2014	F2014	F14	In Progress
NRM 72	S2014	S2014	S2020	
NRM 73	F2014	F2014	F2015	
NRM 84	S2014	S2014	S2020	
NRM 85	S2014	S2014	S2020	
NRM 86	S2015		S2015	
NRM 87	X2015		X2015	
NRM 88	S2013	S2013	S2015	
NRM 91	S2015	NA	S2015	
SUSAG 103	S2014	S2014	S2020	
SUSAG 109	S 2015		S 2015	
SUSAG 116			Inactivate	Inactivate
SUSAG 117	X2014	X2014	X2020	
SUSAG 118			Inactivate	Inactivate
SUSAG 119	X2014	X2014	S 2015	
SUSAG 120	F2014	F2014	F2020	
SUSAG 151			Inactivate	Inactivate
SUSAG 153	F 2014	F2014	F2020	
SUSAG 160	F 2014	F2014	F 2014	
SUSAG 162	S 2016		S 2016	
SUSAG 163	X2015		X2015	
SUSAG 50	F 2013	F 2013	F 2019	
SUSAG 64	S2014	S2014	S 2017	
SUSAG 65	F2015		F2015	
VIT 1	F 2012	F 2012		2015
VIT 113	S 2014	S 2014		2017
VIT 120		2013	2014	2016
VIT 121	S2014	S2014		
VIT 122	F2014	F2014		2015
VIT 123	S 2012	S 2012		2018
VIT 130	S 2014	S 2014		2020
VIT 131	S 2014	S 2014		2017
VIT 132	S 2014	S 2014		2016
VIT 133	S 2012	S 2012		2015
VIT 51	F 2012	F 2012		2016
VIT 52	S 2010	F 2010		2017
VIT 53	S 2013	F 2013		2018
VIT 54	S 2014	S 2014		2020
VIT 55	S 2011	S 2011		2016
VIT 60	F 2011	F 2011		2019
WINE 1	2012-13		2013	2018
WINE 101	F 2014	F 2014		2020
WINE 102	S 2015			2020
WINE 103	F 2014			2020
WINE 104	F 2015			2021
WINE 105	F 2015			2021

WINE 110	F2014	F2014	2020
WINE 111	F 2012	F 2012	2018
WINE 112	F 2012	F 2012	2018
WINE 113	F 2012	F 2012	2018
WINE 114	F 2012	F 2012	2018
WINE 115	F 2014		2020
WINE 116	F 2014		2020
WINE 117	F 2014		2020
WINE 118	F 2012	F 2012	2018
WINE 119	2011-12	2012	2018
WINE 121	S 2014	S 2014	2020
WINE 122	F 2014		2020
WINE 124	2011-12	2012	2018
WINE 125	S 2015		2021
WINE 130	S 2014	S 2014	2020
WINE 131	S 2015	S 2015	2021
WINE 3	S 2014	S 2014	2020
WINE 42.1	F 2014	F 2014	2020
WINE 42.2	S 2014	S 2014	2020
WINE 55A	S 2015		2015
WINE 55B	F 2015		2015
WINE 56	F 2012	Sp 2013	2019
WINE 62	Sp 2014	Sp 2014	2020
WINE 70	F 2014		2020
WINE 150		Inactivate	Inactivate

The Agriculture and Natural Resources Department Six Year plan for assessment has the majority of the courses being completed this Spring 2014. The department intends to continue assessing on a six year cycle as indicated in the chart below.

4.1b Program Student Learning Outcomes Assessment

Program Level Student Learning Outcomes (SLOs) within the Ag/NR Department are completed for all programs: Natural Resource Management, Viticulture, Animal Science, Equine Science, Veterinary Technician, Environmental Horticulture, Sustainable Agriculture, Agriculture Business Management, Agriculture Science, Education and Communication, and Wine Studies. Anchor program coordinators work to ensure course offerings continue to meet program level student learning outcomes on an annual basis.

4.1c Student Learning Outcomes Reporting

Type	Name	SLO Identified	SLOs on Web	Assessment Methodology Identified	Student Assessment Implemented	Assessment Results Analyzed	Change Implemented
Course	AGBUS 107 -MATH APPS IN AGRIC*	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	AGBUS 2 - AG COMPUTER APPLICAT	Fall 2009	Fall 2009	N/A	Fall 2011	Fall 2011	Spring 2012
Course	AGBUS 51 - AGRICULTURE LEADERS	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	N/A
Course	AGBUS 52 - AG OFFICER TRAINING	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	N/A
Course	AGBUS 56 - INTRO AG WINE BUS M	Fall 2009	Fall 2009	N/A	Spring 2012	Fall 2013	N/A
Course	AGBUS 61 - AGRICULTURAL MARKET	Spring 2011	N/A	N/A	Spring 2014	Spring 2014	Spring 2014
Course	AGBUS 62 - AG SALES/COMMUNICAT	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	Spring 2014
Course	AGBUS 7 - AG ECON	Fall 2009	Fall 2009	N/A	Spring 2012	Spring 2012	N/A
Course	AGBUS 71 - AGRICULTURAL ACCNT	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	AGMEC 163 - SMALL GAS ENGINES	N/A	N/A	N/A	N/A	N/A	N/A
Course	AGMEC 60 - AG MACHINE/EQUIP SK	N/A	N/A	N/A	N/A	N/A	N/A
Course	AGRI 10 - INTRO AG SCIENCES	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	AGRI 20 - INTRO TO PLANT SCIEN	Fall 2009	Fall 2009	N/A	Spring 2012	Spring 2012	Fall 2013
Course	AGRI 50 -INTRO AGRICULTURE ED*	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	AGRI 56 - AG ENTERPRISE PROJEC	N/A	N/A	N/A	N/A	N/A	N/A
Course	AGRI 60 - SOIL & PLANT NUTRITI	Fall 2009	Fall 2009	N/A	Fall 2011	Fall 2011	Spring 2012
Course	AGRI 70 - INT PEST MANAGEMENT	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	Spring 2014
Course	ANHLT 109 - COMP/ALT VEG MED	N/A	N/A	N/A	N/A	N/A	N/A
Course	ANHLT 120 - SML ANIML VET ASSI	Spring 2011	N/A	N/A	Fall 2011	Fall 2011	Spring 2012
Course	ANHLT 121 - ANAT SURGICAL/DENT	Spring 2011	N/A	N/A	Spring 2014	Spring 2014	Spring 2014
Course	ANHLT 123 - SMALL ANIMAL VET E	Spring 2011	N/A	N/A	N/A	N/A	N/A
Course	ANHLT 126 - VET TECH PROFICIEN	Spring 2011	N/A	N/A	N/A	N/A	N/A
Course	ANHLT 141- SM. AN. VET ANESTH	N/A	N/A	N/A	Spring 2014	Spring 2014	N/A
Course	ANHLT 142-VET PHARM MED CALCS	N/A	N/A	N/A	Spring 2014	Spring 2014	Spring 2014
Course	ANHLT 151-VET LAB IMAGAING	Spring 2011	N/A	N/A	Fall 2012	Fall 2012	Spring 2013
Course	ANHLT 161 - VETERIN OFF PROCED	Spring 2011	N/A	N/A	N/A	N/A	N/A
Course	ANHLT 50 - VETERINARY ANATOMY	Fall 2009	N/A	N/A	Spring 2012	Spring 2012	Fall 2012
Course	ANHLT 52 - SML ANM REC/TRANS C	Fall 2009	N/A	N/A	Fall 2014	Fall 2014	N/A
Course	ANSCI 153 - SUS ANIMAL PROD	Fall 2009	Spring 2010	Spring 2010	N/A	N/A	N/A
Course	ANSCI 171-BEHAVIOR & HUMANE	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A

	MG						
Course	ANSCI 2 - VETERINARY PRACTICES	Fall 2009	Fall 2009	N/A	Spring 2011	Spring 2011	Spring 2012
Course	ANSCI 20 - BASIC ANIMAL SCIENC	Fall 2009	Fall 2009	N/A	Fall 2011	Fall 2011	Fall 2012
Course	ANSCI 26 - LIVESTOCK EVALUATIO	Fall 2009	Fall 2009	N/A	Spring 2012	Spring 2012	Spring 2014
Course	ANSCI 27 - BEEF CATTLE SCIENCE	Fall 2009	Fall 2009	Spring 2011	Spring 2011	Spring 2011	Spring 2013
Course	ANSCI 28 - SHEEP SCIENCE	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	ANSCI 29 - DAIRY CATTLE SCIENC	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	ANSCI 50 - POULTRY MGMT	Fall 2009	Fall 2009	N/A	Fall 2012	Fall 2012	N/A
Course	ANSCI 51-ANAT/PHYS FARM ANIMAL	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	ANSCI 61 - LIVESTOCK FEED/NUTR	Fall 2009	Fall 2009	N/A	Fall 2013	Fall 2013	N/A
Course	ANSCI 91 - RANGELAND MANAGEMEN	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 101 - HORSE HANDLING SKI	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	Spring 2014
Course	EQSCI 102A - BEG HORSEMANSHIP/	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	Spring 2014
Course	EQSCI 102B - INT HORSEMANSHIP/	Fall 2009	Fall 2009	N/A	Fall 2014	Fall 2014	N/A
Course	EQSCI 102C - ADV HORSEMANSHIP/	Fall 2009	Fall 2009	N/A	Fall 2014	Fall 2014	N/A
Course	EQSCI 120 - INTRO THER RIDING	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 121 - THERAPEUTIC RIDING	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 122 - THER RIDING PRO OP	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 125 -BASICS OF DRESSAGE*	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 151 - EQUINE ACCUPRESSUR	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 162 -HORSE HOUSE & FACI*	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 170 - FARRIER SCIENCE	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 180 -EQUINE BUSINESS MG*	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 25 - EQUINE SCIENCE	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 51 - EQUINE NUTRITION	Fall 2009	Fall 2009	N/A	Fall 2011	Fall 2011	Fall 2012
Course	EQSCI 52 - EQUINE HEALTH	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	N/A
Course	EQSCI 53 - EQUINE REPRODUCTION	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	Spring 2014
Course	EQSCI 60 - EQUINE ANATOMY/PHYS	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	EQSCI 80 - EQUINE & STABLE MG*	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	HORT 110 - UNIQUE TREES NO. CA	Fall 2009	Spring 2011	N/A	Fall 2013	Fall 2013	Fall 2013
Course	HORT 111 - UNIQU SHRBS, VNS, GC	Fall 2009	Spring 2011	N/A	N/A	N/A	N/A
Course	HORT 112 - PERENNIALS FOR SO C	Fall 2009	Spring 2011	N/A	Fall 2013	Fall 2013	Fall 2013
Course	HORT 115 - ORNAMENTAL GRASSES	Fall 2009	Spring 2011	N/A	N/A	N/A	N/A
Course	HORT 115.1 - DSGN ORNAMENTAL G	Fall 2009	Spring 2011	N/A	N/A	N/A	N/A
Course	HORT 119 - LNDSCPNG CALIF NTV	Fall 2009	Spring 2011	N/A	N/A	N/A	N/A
Course	HORT 12 - PLNT MATERIALS: WIN/	Fall 2009	Spring 2011	N/A	Spring 2013	Spring 2014	Spring 2013
Course	HORT 151 - PRUNING ORNAMENTALS	Fall 2009	Spring 2011	N/A	Fall 2013	Fall 2013	N/A
Course	HORT 153 - BASIC TURF CARE	Fall 2009	Spring 2011	N/A	N/A	N/A	N/A
Course	HORT 171 - IPM IN HORTICULTURE	Fall 2009	Spring 2011	N/A	Spring 2013	Fall 2013	Spring 2013
Course	HORT 180 - WATER CONSERVING	Fall 2009	Spring 2011	N/A	Spring 2014	Spring 2014	N/A

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Course	HORT 181 - WATER EFFIC LANDSCA	Fall 2009	Spring 2011	N/A	Spring 2012	Fall 2011	Fall 2013
Course	HORT 189 - LNDSCP DRAINAGE BAS	Fall 2009	Spring 2011	N/A	Spring 2014	Spring 2014	N/A
Course	HORT 195A - CAD:LANDSCAPE SITE	Fall 2009	Spring 2011	N/A	Spring 2014	Spring 2014	N/A
Course	HORT 195B - CAD:PLANTING PLANS	Fall 2009	Spring 2011	N/A	Spring 2014	Spring 2014	N/A
Course	HORT 195C - CAD:IRRIGATION PLA	Fall 2009	Spring 2011	N/A	Spring 2014	Spring 2014	N/A
Course	HORT 50.1 - INTRO HORTICULTURA	Fall 2009	Spring 2011	Spring 2011	Spring 2011	Spring 2011	Fall 2011
Course	HORT 50.2 - HORT INDUSTRY & CA	Fall 2009	Spring 2011	N/A	Fall 2012	Spring 2013	N/A
Course	HORT 56 - ENTERPRISE PROJECT	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	HORT 65 - HORT WORKPLACE PRACS	Fall 2009	Spring 2011	N/A	Fall 2012	Fall 2012	Fall 2013
Course	HORT 66 - GRADEN CENTER OPS	Fall 2009	Spring 2011	N/A	Spring 2013	Fall 2013	Spring 2014
Course	HORT 70 - PLANT PROPAGATION	Fall 2009	Spring 2011	N/A	Spring 2013	Spring 2013	N/A
Course	HORT 71 - NURSERY PRODUCTION	Fall 2009	Spring 2011	N/A	Fall 2012	Spring 2013	Fall 2013
Course	HORT 72 - GREENHOUSE PRODUCTIO	Fall 2009	Spring 2011	N/A	Spring 2014	Spring 2014	N/A
Course	HORT 8 - PLANT MATERIALS: SU/F	Fall 2009	Spring 2011	N/A	Fall 2013	Spring 2014	N/A
Course	HORT 80 - LANDSCAPE PRACTICES	Fall 2009	Spring 2011	N/A	Spring 2012	Spring 2012	Spring 2013
Course	HORT 81 - TURFGRASS MGMT*	Fall 2009	Spring 2011	N/A	N/A	N/A	N/A
Course	HORT 82 - INTRO TO ARBORICULT*	Fall 2009	Spring 2011	N/A	N/A	N/A	N/A
Course	HORT 82.1 - TREE HEALTH MGT*	Fall 2009	Spring 2011	N/A	N/A	N/A	N/A
Course	HORT 91 - LANDSCAPE CONST/ESTI	Fall 2009	Spring 2011	N/A	Fall 2012	Spring 2012	Fall 2013
Course	HORT 92.1 - LANDSCAPE IRRIGATI	Fall 2009	Spring 2011	N/A	Spring 2013	Spring 2013	Spring 2014
Course	HORT 92.2 - LOW VOLUME LANDSC	Fall 2009	Spring 2011	N/A	Spring 2013	Spring 2013	Spring 2014
Course	HORT 93 - LANDSCAPE DRAFT & DE	Fall 2009	Spring 2011	N/A	Fall 2011	Fall 2011	Fall 2012
Course	HORT 94 - LANDSCPE DESIGN APPL	Fall 2009	Spring 2011	N/A	Spring 2014	Spring 2014	Spring 2015
Course	NRM 102 - NATIVE PLANTS RES*	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	NRM 103 - RESTROING NATIVE HAB	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	Spring 2014
Course	NRM 110 -INTERP INTERACTION T*	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	NRM 111 - ORIENTAT NAT RES PRK	Fall 2009	Fall 2009	N/A	Fall 2014	Fall 2014	Fall 2014
Course	NRM 12 - INTRO TO ENVIRON CONS	Fall 2009	Fall 2009	N/A	Spring 2010	Spring 2010	Fall 2011
Course	NRM 121 -GLOBAL POSITIONING S*	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	NRM 131 - TRAILS MAINT/RECONST	Spring 2011	Spring 2011	N/A	Spring 2013	Spring 2013	N/A
Course	NRM 132 - CHAINSAW OPER/CARE	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	Spring 2014
Course	NRM 141 - BEG ROCK CLIMBING/SA	Spring 2011	Spring 2011	N/A	Spring 2014	Spring 2014	Spring 2014
Course	NRM 142 - ORIENTEERING WILDERN	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	NRM 51 - WILDLAND TREE/SHRUBS	Fall 2009	Fall 2009	N/A	Spring 2011	Spring 2011	Spring 2012
Course	NRM 56 - ENTERPRISE PROJECT	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A

Course	NRM 60 - INTRO TO OUTDOOR REC	Fall 2009	Fall 2009	N/A	Spring 2012	Spring 2012	N/A
Course	NRM 61 - OUTDOOR REC MGT	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	NRM 63 - PARK INTERPRETATION	Fall 2009	Fall 2009	Spring 2011	Fall 2011	Fall 2011	Fall 2012
Course	NRM 65 - REC FACILITY MAINT	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	NRM 66 - WILDERNESS SKILLS	Spring 2011	Spring 2011	N/A	Spring 2012	Spring 2012	Spring 2014
Course	NRM 67-REC FACILITY MGMT	Spring 2011	Spring 2011	N/A	Fall 2014	Fall 2014	N/A
Course	NRM 70 - FOREST PRACTICES	Spring 2011	Spring 2011	N/A	Fall 2014	Fall 2014	Fall 2014
Course	NRM 72 - FIRE CNTROL/ITS USE	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	Spring 2014
Course	NRM 73 - INTRO FOREST MEASUREM	Spring 2011	Spring 2011	N/A	Fall 2014	Fall 2014	N/A
Course	NRM 84 - INTRO FISH/WILDLIFE C	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	Spring 2014
Course	NRM 85 - FOR HYDROL & WTRSHD M	Spring 2011	Spring 2011	N/A	Spring 2014	Spring 2014	Spring 2014
Course	NRM 86 - WATERSHED MONITR/ASSM	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	NRM 87 - GIS APPLIC IN NAT RES	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	NRM 88 - WATRSHD ECOL/RESTORAT	Fall 2009	Fall 2009	N/A	Spring 2013	Spring 2013	N/A
Course	NRM 91 - RANGELAND MANAGEMENT	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	SUSAG 103 - AGRICULTURAL COMPO	N/A	N/A	N/A	Spring 2014	Spring 2014	Spring 2014
Course	SUSAG 109 - ORGANIC CROP PLANN	N/A	N/A	N/A	N/A	N/A	N/A
Course	SUSAG 116 - ORGANIC APPLE PROD	N/A	N/A	N/A	N/A	N/A	N/A
Course	SUSAG 117 - ORG FRUIT TREE & B	N/A	N/A	N/A	Summer 2014	Summer 2014	N/A
Course	SUSAG 118 - OLIVE OIL PROD & E	N/A	N/A	N/A	N/A	N/A	N/A
Course	SUSAG 119 - SPECIALTY CROP PRO	N/A	N/A	N/A	Summer 2014	Summer 2014	N/A
Course	SUSAG 120 - OR GRDING & FOOD P	N/A	N/A	N/A	Fall 2014	Fall 2014	N/A
Course	SUSAG 151 -HYDROPONIC FOOD PR*	N/A	N/A	N/A	N/A	N/A	N/A
Course	SUSAG 153 - CSA	N/A	N/A	N/A	Fall 2014	Fall 2014	N/A
Course	SUSAG 160 - DIRECT FARM MARKET	N/A	N/A	N/A	Fall 2014	Fall 2014	N/A
Course	SUSAG 162 - CSA LATE SPRING	N/A	N/A	N/A	N/A	N/A	N/A
Course	SUSAG 163 - CSA SUMMER	N/A	N/A	N/A	N/A	N/A	N/A
Course	SUSAG 50 - INTRO SUSTAIN AGRI	N/A	N/A	N/A	Fall 2013	Fall 2013	Fall 2013
Course	SUSAG 64 - WARM SEASON VEG PRO	N/A	N/A	N/A	Spring 2014	Spring 2014	N/A
Course	SUSAG 65 - COOL SEASON VEG PRO	N/A	N/A	N/A	N/A	N/A	N/A
Course	VIT 1 - WORLD VIT & WINE STYLE	Fall 2008	Fall 2008	N/A	Fall 2012	Fall 2012	Spring 2013
Course	VIT 113 - ORGANIC VITICULTURE	Fall 2008	Fall 2008	N/A	Spring 2014	Spring 2014	Spring 2014
Course	VIT 120 - VINEYARD PRUNING	Fall 2008	Fall 2008	N/A	Spring 2014	Spring 2014	Spring 2014
Course	VIT 121 - PRUNING TECHN VINE B	Fall 2008	Fall 2008	N/A	Spring 2014	Spring 2014	N/A
Course	VIT 122 - VINE CANOPY MNGMT	Fall 2008	Fall 2008	N/A	Spring 2014	Spring 2014	Spring 2014
Course	VIT 123 - SPRING BUD & GRAFT	Fall 2008	Fall 2008	N/A	Spring 2012	Spring 2012	Spring 2013
Course	VIT 130 - GRAPEVINE PHYSIOLOGY	Fall 2008	Fall 2008	N/A	Spring 2014	Spring 2014	Spring 2014

Course	VIT 131 - FRUIT QUALITY ASSURA	Fall 2008	Fall 2008	N/A	Spring 2014	Spring 2014	Spring 2014
Course	VIT 132 - ADVANCES IN VINEYARD	Fall 2008	Fall 2008	N/A	Spring 2014	Spring 2014	Spring 2014
Course	VIT 133 - ADVANCES IN VITICULT	Fall 2008	Fall 2008	N/A	Spring 2012	Spring 2012	Spring 2013
Course	VIT 51 - VITICULTURE: FALL PRA	Fall 2008	Fall 2008	N/A	Fall 2012	Fall 2012	Fall 2013
Course	VIT 52 - VITICULTURE: SPRING P	Fall 2008	Fall 2008	Spring 2010	Spring 2010	Fall 2010	Spring 2011
Course	VIT 53 - ADV VINEYARD PRODUCTI	Fall 2008	Fall 2008	Spring 2010	Spring 2013	Fall 2013	Spring 2013
Course	VIT 54 - VIT: SUMMER PRACTICES	Fall 2008	Fall 2008	N/A	Spring 2014	Spring 2014	Spring 2014
Course	VIT 55 - BASIC WINE VITICULTUR	Fall 2008	Fall 2008	N/A	Spring 2011	Spring 2011	Spring 2012
Course	VIT 60 - VINEYARD MANAGEMENT	Fall 2008	Fall 2008	N/A	Fall 2011	Fall 2011	Fall 2012
Course	WINE 1 - WORLD VIT & WINE STYL	Fall 2009	Fall 2009	N/A	Fall 2012	Fall 2012	N/A
Course	WINE 101 - WINE SALES AND DIST	Spring 2011	Spring 2011	N/A	Fall 2014	Fall 2014	Fall 2014
Course	WINE 102 - WINES GLBL MRKT/RTL	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	WINE 103 - CONSUMER DIRECT WIN	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	WINE 104 - AG & WINE MKTG FNDM	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	WINE 105 - WINE PUBLIC RELATIO	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	WINE 110 - PROF WINE JUDGING	Spring 2011	Spring 2011	N/A	Fall 2012	Fall 2012	Spring 2013
Course	WINE 111 - SONOMA APPELLATIONS	Spring 2011	Spring 2011	N/A	Fall 2012	Fall 2012	Fall 2013
Course	WINE 112 - WINE REGIONS OF CAL	Spring 2011	Spring 2011	N/A	Fall 2012	Fall 2012	Spring 2013
Course	WINE 113 - WINEMAKERS OF SONOM	Spring 2011	Spring 2011	N/A	Fall 2012	Fall 2012	Spring 2013
Course	WINE 114 - WINES OF CLAIF & EU	Spring 2011	Spring 2011	N/A	Fall 2012	Fall 2012	Spring 2013
Course	WINE 115 - WINES OF CA AUST/NE	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	WINE 116 - WINES OF ITALY	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	WINE 117 - WINES OF FRANCE	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	WINE 118 - ZINFANDEL-GRAPE TO	Spring 2011	Spring 2011	N/A	Fall 2012	Fall 2012	Spring 2013
Course	WINE 119 - EXAMINATION/PINOT N	Fall 2009	Fall 2009	N/A	Fall 2012	Fall 2012	Fall 2012
Course	WINE 121 - WINES OF SPAIN	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	N/A
Course	WINE 122 - DESSERT WINES OF WO	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	WINE 124 - CABERNET SAUVIGNON	Fall 2009	Fall 2009	N/A	Fall 2014	Fall 2014	N/A
Course	WINE 125 - NAPA VALLEY	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A
Course	WINE 130 - WINE SERVICE HOSPIT	Spring 2011	Spring 2011	N/A	Spring 2014	Spring 2014	N/A
Course	WINE 131 - WINE IND EVENT PLAN	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	WINE 150 - AMATEUR WINEMAKING	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	WINE 3 - INTRO TO ENOLOGY	Spring 2011	Spring 2011	N/A	Spring 2014	Spring 2014	N/A
Course	WINE 42.1 - FALL WINERY OPERAT	Spring 2011	Spring 2011	N/A	Fall 2014	Fall 2014	N/A
Course	WINE 42.2 - SPR WINERY OPERATI	Spring 2011	Spring 2011	N/A	Spring 2014	Spring 2014	N/A
Course	WINE 55A - LAB ANALYSIS OF WIN	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	WINE 55B - LAB ANALYSIS OF WIN	Spring 2011	Spring 2011	N/A	N/A	N/A	N/A
Course	WINE 56 - INTRO AG/WINE BUS MG	Fall 2009	Fall 2009	N/A	Fall 2012	Spring 2013	N/A
Course	WINE 62 - AG SALES/COMMUNICATI	Fall 2009	Fall 2009	N/A	Spring 2014	Spring 2014	N/A
Course	WINE 70 - WINE COMP TASTING	Fall 2009	Fall 2009	N/A	N/A	N/A	N/A

VIT 113	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 120	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 121	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 122	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 123	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 124	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 130	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 131	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 132	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 133	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 151	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 60	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VIT 72	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 101	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 102	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 103	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 104	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 105	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 108	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 110	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 111	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 112	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 113	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 114	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 115	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 116	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 116.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 117	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 118	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 119	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 120	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 121	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 122	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 124	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 125	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 130			X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 131	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 150	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 151	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 42.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 42.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 55A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 55B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 62	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 70			X	X	X	X	X	X	X	X	X	X	X	X	X	X

4.2b Narrative (Optional)

All courses are written and evaluated during the curriculum process to reflect institutional student learning outcomes. The new curriculum is reviewed by each Occupational Program Advisory Committee which reflects industry needs and services.

5.0 Performance Measures

NA

5.1 Effective Class Schedule: Course Offerings, Times, Locations, and Delivery Modes (annual)

- The AG/NR Department offers courses Monday through Friday and evening classes and weekend courses. Classes are offered based on student needs, maximizing use of college facilities, serving new or targeted populations, and ensuring enrollment growth sufficient to fund ongoing district operations. Many short courses are offered, ie.. 2-8 weeks, Fri/Sat, two weekends, etc.
- The majority of classes are offered on Santa Rosa campus and the SRJC Shone Farm. The Veterinary Technician and Wine Studies programs also offer courses on the Petaluma Campus. Classes are also occasionally offered off site, such as Pepperwood Preserve, Equi-Ed and Animal Care Center.
- The department believes strongly in hands-on experience. Unfortunately, classes with labs require lab set up and we are too understaffed at Shone Farm, Santa Rosa, and Petaluma to set up any more labs. The current tenuous status of our classified staffing precludes any attempts to offer more sections of lecture/lab based classes or development of further curriculum in this format.
- AGBUS 107 - Mathematical Applications in Agriculture (when able to offer) is taught in online format. The department believes strongly in hands on learning and that Ag lab courses must be taught in a practical laboratory setting.
- There is always a demand for specific courses to meet the needs of industry. Faculty meet regularly with their respective advisory committees for updates in the industry and seek advice and recommendations concerning new courses

5.2a Enrollment Efficiency

The AG/NR department evaluates the relevancy of each course in relation to scheduling. Based upon 2011-2012 combined totals for ALL locations in the district, the Ag/NR Department averaged 89.4% of seats filled (Fall 2011 - 86.9%, Spring 2012 - 91.9%). To maximize enrollment efficiency, courses are now offered on a rotation plan. Additionally, the AG/NR department increases their advertising and outreach efforts for low class counts.

Those programs with an enrollment efficiency over 100%, based on 2011-2012 data were: Agriculture (S2012 - 131.5%), Sustainable Agriculture (F2011 - 105.6%) and Wine Studies (S2012 - 106.1%). Due to the current budget situation, it is not possible to open new sections, so instructors are overenrolling classes to ensure students can get through their certificates/degree programs in a two year period. Unfortunately this practice of overenrolling is not conducive to the majority of Ag/NR classes, which are lecture and lab based courses. Class sizes for most of our courses are dictated by laboratory conditions, such as equipment availability, safety issues, etc. Based upon 2011-2012 combined totals for ALL locations in the district, the AG/NR classes average 26.9 students per class (a number which has steadily been climbing year after year). This average class size is not optimum for safety in lecture-laboratory based classes that utilize heavy equipment, livestock, and potentially dangerous substances. If class sizes were to increase any further, this would come at a high cost of liability. It is also not the best hands on learning environment for students.

5.2b Average Class Size

Class sizes for most of our courses are dictated by laboratory conditions, such as equipment availability, safety issues, etc. Based upon 2011-2012 combined totals for ALL locations in the district, the AG/NR classes average 26.9 students per class (a number which has steadily been climbing year after year). This average class size is not optimum for safety in lecture-laboratory based classes that utilize heavy equipment, livestock, and potentially dangerous substances. If class sizes were to increase any further, this would come at a high cost of liability. It is also not the best hands on learning environment for students.

5.3 Instructional Productivity

2011-2012 FTES was 307.0841, a -8.64% decrease from 2010-2011. Ag/NR FTES represents 2.03% of the district total.

Based upon 2011-2012 data, combined totals for ALL locations in the district, the Ag/NR Department's FTES to FTEF ratio is 20.3335. Each discipline is as follows:

- Agriculture: 23.9
- Agribusiness: 17.44
- Agriculture Mechanics: 12.925
- Animal Health (Veterinary Technician): 17.115
- Animal Science: 14.735
- Equine Science: 10.085
- Environmental Horticulture: 12.77
- Natural Resources: 20.48
- Sustainable Agriculture: 15
- Viticulture: 21.625
- Wine Studies: 14.56

Disciplines with high productivity ratio is reflective of the currency and value of the course, as well as having a full time program coordinator to assist in marketing and development of the program.

Disciplines that fall below district standards for instructional productivity reflect safety considerations of the students and the lack of full time program coordinator to effectively develop and market programs.

The classes held at Shone Farm, the outdoor laboratory for the Ag/NR department, generated 33% of all Ag/NR FTES reported in 2011-2012

5.4 Curriculum Currency

There has been a major emphasis in the department for curriculum currency. Faculty have been working closely with statewide advisory groups monitoring Transfer Model Curriculum (TMC) and C-IDs (Course Identifications). Additionally, input has been

obtained from the local program Advisory Committees and Ag/NR Department to ensure the currency and relevancy of our course offerings in the Ag/NR Department.

With the acquisition of a Sustainable Agriculture program coordinator in Fall 2011, the Sustainable Agriculture curriculum has largely been the focus of departmental curriculum updates. Changes to the Sustainable Agriculture curriculum effective Fall 2013 include:

- 1) SUSAG 111/112 combined into new full semester SUSAG 109 Organic Crop Planning and Production course and added as a core requirement
- 2) Addition of three core courses, to include SUSAG 109 (Organic Crop Planning and Production), SUSAG 160 (Direct Farm Marketing), AGMEC 60 (Ag Machinery and Equipment Skills)
- 3) Changed SUSAG 110 (Organic Gardening and Food Production) from core requirement to elective
- 4) Eliminated of redundancy within current SUSAG course offerings
- 5) Inactivation of Sustainable Agriculture Production Certificate

In the next two years, SUSAG program revisions will include:

- 1) Program emphasis for certificate and major tracks to include: General SUSAG, Animal Science / livestock production, Crop Production, Ag Business / Marketing, Environmental Horticulture.
- 2) Working on developing agreements with area farms to support AGRI 99I (Internship within emphasis) as a core requirement
- 3) Integration of interdepartmental and cross-disciplinary restricted electives within each degree emphasis
- 4) Development of new SUSAG courses relevant to current industry needs (i.e. Certifications and Regulations)

With the acquisition of a new full time Agribusiness instructor starting in Fall 2013, curriculum revisions are anticipated for Agribusiness course offerings, including the reactivation of Ag Accounting and the potential addition of Farm Management.

5.5 Successful Program Completion

Associate of Science degrees

Program coordinators and instructors encourage individual students to continue with their classes for program completion. From 1997-2012, Associate of Science degrees were awarded for the following programs:

- Agribusiness: 2

- Agriculture Science, Education and Communication: 2
- Animal Science: 9
- Equine Science: 23
- Environmental Conservation ~ Natural Resource Management: 7
- Environmental Conservation ~ Parks & Recreation Management: 10
- Environmental Conservation ~ Watershed Management: 13
- Environmental Horticulture ~ Garden Design: 4
- Environmental Horticulture ~ Garden Design with CAD skills: 4
- Environmental Horticulture ~ Landscape Management: 3
- Environmental Horticulture ~ Nursery Management: 2
- Sustainable Agriculture: 15
- Viticulture: 6
- Wine Studies ~ Enology: 14
- Wine Studies ~ Wines Business and Marketing: 6
- Wine Studies ~ Wine Evaluation and Service: 10

From 2007-2012, 103 Associates of Science degrees have been awarded in the SRJC Ag/NR Department. This represents 5.5% of the statewide total of 546 degrees. While the number of associate degrees for Ag/NR majors is low, these numbers are not surprising or in any way discouraging. Completion of an AS degree in an Ag/NR major is not necessary or particularly useful for students who are Ag/NR majors intending to transfer to earn a BS in Ag/NR; these students accurately see very little benefit in completing a Ag/NR major with an AA degree. These students are so focused on transferring that they do not always complete all lower division courses here, but fit in as much as they can before transfer. Thus they may not complete all requirements for an AS degree.

Certificates

Since 2007, certificates were awarded in the following programs:

- Agribusiness: 2
- Animal Science: 1 (Certificate discontinued in 2011)
- Equine Science: 5
- Environmental Conservation ~ Natural Resource Management: 3
- Environmental Conservation ~ Parks & Recreation Management: 7
- Environmental Conservation ~ Watershed Management: 8
- Environmental Horticulture ~ Garden Design: 5
- Environmental Horticulture ~ Garden Design with CAD Skills: 14
- Environmental Horticulture ~ Landscape Maintenance Skills: 2
- Environmental Horticulture ~ Landscape Management: 2
- Environmental Horticulture ~ Landscape Technician: 6
- Environmental Horticulture ~ Nursery Management: 2
- Environmental Horticulture ~ Nursery Technician: 2
- Natural Resource Management: 5
- Parks and Recreation Management: 5
- Sustainable Agriculture: 8
- Veterinary Technician (new program as of 2007): 47
- Viticulture: 17
- Watershed Management: 3
- Wine Studies ~ Enology: 12
- Wine Studies ~ Wine Business and Marketing: 15
- Wine Studies ~ Wine Evaluation and Service: 24
- Wine Studies ~ Wine and Vines: 16

Any of the certificate programs leading to licensure (ie. Veterinary Technician) has a better completion rate for students. The department is working with particular programs that have industry certification or licensure in particular to further strengthen successful program completion. However, as with all career and technical education programs, it should be pointed out that many students do not have a goal of completing a certificate; instead, their focus may be on taking one or two selected courses for skill building, job enhancement, or licensure for entry into the workforce. Unfortunately, student success rates on licensure exams/certifications is not readily available from industry. Success of students is based solely on anecdotal information. The district would highly benefit in helping to acquire this information by having a "leaver study".

As a department we try to make sure that we minimize any barriers to successful completion of our majors courses. We coordinate scheduling between programs and ensure that courses are offered on a rotational basis frequently enough for students to complete their programs of study within a 2 year time period (when not under schedule reduction).

5.6 Student Success

Students receiving a grade of A, B, C or CR

Based upon 2011-2012 totals for ALL locations in the district, the Ag/NR Department has the following percentage of students receiving a grade of A, B, C or CR in each discipline as follows:

- Agriculture: 73.7-82.7%
- Agribusiness: 85.7-78.6%
- Agriculture Mechanics: 94.7%
- Veterinary Technician/Animal Health: 62.6-70.3%
- Animal Science: 67.1-68.6%
- Equine Science: 75.6-67.2%
- Environmental Horticulture: 68.1-68.8%
- Natural Resources: 72.8-79.8%
- Sustainable Agriculture: 75.8-74.4%
- Viticulture: 69.5-80.7%
- Wine Studies: 80.6-86.4%

On average across all disciplines, based upon 2010-2011 combined totals for ALL locations in the district, the Ag/NR Department has the following percentage of students receiving a grade of A, B, C or CR, 78.8%

Grade Point Average

The programs coordinators and instructors encourage individual students to strive for excellence. Based upon 2011-2012 combined totals for ALL locations in the district, the Ag/NR Department has the following average GPA in each discipline as follows:

- Agriculture: 2.55-2.74
- Agribusiness: 3.31-2.91
- Agriculture Mechanics: 3.58
- Veterinary Technician/Animal Health: 2.21-2.4
- Animal Science: 2.28-2.41
- Equine Science: 2.83-2.43

- Environmental Horticulture: 2.11-2.04
- Natural Resources: 2.74-2.82
- Sustainable Agriculture: 3.08
- Viticulture: 2.39-2.64
- Wine Studies: 2.92-2.83

The average GPA for all disciplines ranges from 2.61.

5.7 Student Access

The Ag/NR Department serves a broad range of students and has demonstrated experience in understanding and being sensitive to the diverse academic, socioeconomic, cultural, disability and ethnic backgrounds of community college students. Depending on the program enrollment of students in each discipline broken down by ethnicity and gender reflects that in the Ag/NR Department, approximately 70% of students are white, 20% hispanic, and 10% either black, asian, native american, pacific islander, filipino or other non-white ethnicity.

Review of the number of students broken down by gender reveals trends particular to programs. Animal based programs are largely female based (70-91%), while mechanic based classes are predominately male (80-90%). Agriculture Business, Sustainable Agriculture, and wine studies tend to be equally enrolled by both males and females. Review of the number of students broken down by age reveals that the Ag/NR department serves a broad range of age demographics, however the majority of student fall between 19-25. Horticulture, Viticulture, Sustainable Agriculture and Wine Studies, however also serve a substantial amount of students aged 46-60.

5.8 Curriculum Offered Within Reasonable Time Frame

All courses in the Ag/NR Department certificates and majors are offered on a regular or rotational basis so that students can ideally complete their programs of study within a two year period (barring budget restrictions). Working with their advisory committees, program coordinators developed program course rotations that are reviewed annually. Course rotation sequences are maintained departmentally and shared with counseling and CTE coordinators.

5.9a Curriculum Responsiveness

In Spring 2010, the department developed a comprehensive master plan to determine how best to prepare students to continue their Ag/NR education or to enter the job market. This included conducting a scan of industry trends, review of labor market data, and an analysis of a number of other indicators. Advisory committee input was gathered and a community focus group was held to provide further feedback. The process concluded in spring 2011 with the development of work plans for each discipline, outlining key activities and timelines for implementation. Recommendations for revising curriculum is incorporated in the work plans.

The Ag/NR Department has advisory committees with membership numbers as follows for each program:

- Agribusiness/Wine Studies: 32

- Animal Health: 22
- Animal Science/Equine Science: 45
- Environmental Horticulture: 19
- Natural Resources: 33
- Sustainable Agriculture: 24
- Viticulture: 28

Members represent a diversity of professional opportunities within each of the respective disciplines.

Members that represent industry and also serve as adjunct faculty are as follows for each program:

- Agribusiness/Wine Studies: 7
- Animal Health: 4
- Animal Science/Equine Science: 2
- Environmental Horticulture: 2
- Natural Resources: 7
- Sustainable Agriculture: 4
- Viticulture: 0

The SRJC Agriculture/Natural Resources Department has continued with major curriculum work in each of its program areas to meet the California Community College Agriculture Core Course Model Programs. SRJC Agriculture & Natural Resources program coordinators and instructors meet annually with community college, CSU, and UC instructors in collaboration with current and new courses within their occupational curriculum. These courses follow a statewide articulation numbering system with CC, CSU, and UC agriculture courses statewide. Some of these courses also satisfy General Education requirements and UC/CSU numbered status. Agribusiness, Natural Resources, Animal Science, Environmental Horticulture, Viticulture, Welding, Equine Science and Park Management courses went through major updates and revision, with the addition of Student Learning Outcomes (SLOs). All Agriculture and Natural Resources Programs have a transfer track to CSU and UC agriculture majors. Additionally, the certificate programs during the major curriculum work were enhanced to meet the local employer and industry needs in the community. Program advisory committees were utilized for the review and approval process. During the California Agricultural Teacher Association quarterly meetings, Tech Prep and/or career pathways were discussed with local high schools and the Agriculture and Natural Resources Department.

5.9b Alignment with High Schools (Tech-Prep ONLY)

During the California Agricultural Teacher Association (CATA) quarterly meetings, Tech Prep and/or career pathways are discussed with local high schools and the SRJC Agriculture and Natural Resources Department. Additionally, the faculty are in the process of discussing articulation opportunities with Eve Nighswonger. This entails identifying Ag courses to put on the credit by exam list. Faculty have been concerned that the typical Ag transfer institutions may not accept credits granted to students through the credit by exam process so this needs to be further explored.

5.10 Alignment with Transfer Institutions (Transfer Majors ONLY)

The SRJC Agriculture/Natural Resources Department has continued with major curriculum work in each of its program areas to meet the California Community College Agriculture Core Course Model Programs. SRJC Agriculture & Natural Resources program coordinators and instructors meet annually with community college, CSU, and UC instructors in collaboration with current and new courses within their occupational curriculum. These courses follow a statewide articulation numbering system with CC, CSU, and UC agriculture courses statewide. Some of these courses also satisfy General Education requirements and UC/CSU numbered status. All Agriculture and Natural Resources Programs have a transfer track to CSU and UC agriculture majors.

5.11a Labor Market Demand (Occupational Programs ONLY)

The value of agriculture-related degrees cannot be underestimated. No other industry can feed the world's population that is growing at a rate where we cannot produce enough food for the number of people. According to research (Feedstuffs, October 26, 2009) our food production must double by 2050. Currently 21 million American workers produce, process and sell the nation's food and fiber, and the average age of today's farmer is 55.3 years old. Due to imminent retirements and the difference between the current rate of global agriculture productivity and the pace required to meet future needs of our growing world population, graduates in agriculture degree programs are needed. According to the latest data from AgCareers.com, 81% of jobs in the ag industry require education beyond high school and almost half require at least a bachelor's degree. According to the AgCareers.com/AgrowKnowledge Enrollment and Employment Outlook Report in 2008 there was a deficit of 9,317 graduates with agriculture degrees to fill open positions in the US. The USDA also estimates there are or will be 54,500 annual openings for individuals with baccalaureate or higher degrees in food, renewable energy and environmental specialties between 2010 and 2015. The USDA study projected only 53,500 qualified graduates will be available each year and stated that employers have expressed a preference for graduates from colleges of agriculture and natural resources that tend to have more relevant work experience.

Although the US unemployment rates remained high in 2011, AgCareers.com experienced a significant increase in jobs posted on their website. In 2011, AgCareers.com had almost 40,000 job openings posted in the United States (up 16% from the previous year). That is more than 3,300 agriculture-related job openings each month. Further demonstrating the need for educated agriculturalists, the November 2009 Monthly Labor Review projected particularly strong (double-digit) growth in certain agricultural careers such as agricultural inspectors, animal scientists, food scientists and technologists, natural sciences managers, pest control workers, soil and plant scientists, and veterinarians. December 2011, the Washington Post printed the results of a Georgetown University study showing that recent college graduates with degrees in agriculture and natural resources were among those with the lowest unemployment rates in the nation at 7 percent, surpassed only by graduates with degrees in health (5.4 percent) and education (5.4 percent).

Agriculture positions are not only production-based, but encompass a broad range such as sales representatives, research scientists, quality assurance, marketing and engineers, just to name a few. The average starting salary for a graduate in the ag industry is almost \$49,000 (according to the AgCareers.com/AgrowKnowledge Enrollment and Employment Outlook Report and the AgCareers.com Compensation Benchmark Review).

Agriculture is the top economic driver in California and generates over \$43 billion in revenue for the state. According to the California Department for Food and Agriculture, California agriculture is experiencing record growth and production with a 15 percent increase in the sales value of its products in 2011. The state's 81,500 farms and ranches received a record \$43.5 billion for their output last year, up from the \$38 billion reached during 2010. California remained the number one state in cash farm receipts with 11.6 percent of the US total. The state accounted for 15 percent of national receipts for crops and 7.4 percent of the US revenue for livestock and livestock products. California's agricultural abundance includes more than 400 commodities. The state produces nearly half of US-grown fruits, nuts and vegetables.

The California Community College Centers for Excellence recently completed an environmental scan of the agriculture value chain in California (www.coecc.net/Environmental_Scans/ag_scan_cv_11.pdf) and found that there are currently 2.5 million individuals employed in more than 800 job titles within the agriculture value chain in the state. The average annual salary for agricultural value chain workers in California is \$50,000 (California careers as a whole average \$43,000). While the number of production jobs (currently 206,303) is expected to decrease in the next five years (due to the increasing efficiencies and mechanization), a net increase of 181,000 jobs is expected throughout the entire agricultural value chain, which includes support, research, technology, production, processing/packaging, marketing, and sales and distribution.

In a recent 2011 survey by the Economic & Workforce Development through the California Community Colleges, agriculture employers were asked to describe their organizations level of interest regarding educational and training programs that could be developed by community colleges for the agriculture value chain and workforce. The majority of responses indicated interest in on-site customized training for current employees and a certificate specific to occupations.

Following are highlights of industry trends related to the disciplines within the Ag/NR Department.

VETERINARY TECHNICIAN

The demand for Registered Veterinary Technicians is nothing short of extreme. There are far fewer RVTs in Sonoma County than are required by the labor market. The California 2010 EDD data shows an acceleration of need for RVTs. There were 120 registered RVTs in 2010 and with an anticipated need of 200 by 2020. This 66.7% growth is once again the strongest for any county in California. In addition there are the estimated 250 Veterinary Assistant positions in our county. State estimates for the 2010-2020 time frame include an anticipated 31% growth in technician positions (2,600 new jobs). According to the California Veterinary Medical Board there are 138 Registered Veterinary Technicians residing in the Sonoma County as of January 2012

to fill an estimated 240 positions. EDD labor market data are consistent with the number of workplace facilities (94 current premise permits) and veterinarians (231 valid licenses) in Sonoma County. According to the US Bureau of Labor Statistics the job prospects for Veterinary Technicians is "excellent". The 2010 data update has an increased anticipated growth of 52% or over 40,000 new jobs and 50,000 openings over the next 10 years.. As of 2010 Veterinary Technicians are now listed under "Healthcare Professions" by BLS rather than Professional, Scientific, and Technical Services. The job prospects are still excellent, but the category change means they are no longer at the top of their list.

Santa Rosa Junior College is the predominant source for RVTs. Over the last three years 84% (26/31) of new RVT licenses in Sonoma County were earned by SRJC students.

Over the last few years Dr. Famini has developed a google group for employment and other announcements. Over 300 current and former SRJC students are members and hospitals now routinely email job announcements to Dr. Famini in preference to Craigslist or other sources. Taking into account the usual sources (craigslist, etc) and the google group listings there are over 300 jobs/year for veterinary support staff in the Sonoma/Marin county area.

The closest community colleges that offer a Veterinary Technician program are Consumnes River College in Sacramento (~2 hours drive) and Foothill College in Los Altos Hills (1hr 45 minute drive). There are also branches of the private school Western Career College in Pleasant Hill and San Leandro (about 1hr 15 minute drive). However, current Western Career College tuition is about \$35,000 for the two-year program. All of the above programs are distinct from SRJC in that they are AVMA approved full time programs that include far more extensive hands-on component, maintain colonies of canine and feline patients, etc.

Recent articles mentioning the strong job market for Registered Veterinary Technicians include:

"Eight secure jobs worth landing this Spring and beyond" on Fox Business News posted 3/27/2013.

"Animals Need Health Care Too" in Community College Week from 2/22/2010.

"Vet Techs in Demand" in the Press Democrat on 8/23/2009. This was a reprint of a New York Times Article.

Veterinary Technicians were listed as Number 2 in "150 Best Recession-Proof Jobs" by Laurence Shatkin, Jist Publishing, November 2008.

The critical demand for Registered Veterinary Technicians locally, statewide, and nationally continues to fuel strong student enrollment in courses. Additionally, there is an overall trend towards larger specialty hospitals and corporate ownership of hospitals (Veterinary Centers of America and Banfield). The larger and corporate hospitals tend

to better utilize Registered Veterinary Technicians. This is due to both to a need for more technically advanced veterinary assistants as well as the fact that RVTs are a cheaper alternative to perform many of the tasks reserved for veterinarians in smaller hospitals. This includes a greater role in client communication, veterinary dentistry, vaccine appointments, etc. Larger and corporate practices are also less likely to allow unregistered assistants to perform tasks legally reserved for RVTs such as inducing anesthesia and placing splints.

The SRJC Veterinary Technician Program fulfills the state Veterinary Medical Board requirements for students to sit for the state Registered Veterinary Technician board exam through the alternate route. There are three routes to be eligible to sit for licensure. 1) Attend a full time American Veterinary Medical Association 2-year program (the closest program is ~100 miles from Santa Rosa) 2) Already have an equivalent license from another state and have a minimum number of clinical experience or 3) the Alternative Route. The alternative route consists of two basic requirements: Academic requirements and Clinical experience requirements. The Academic requirements consist of many specific areas of instruction within 20 semester units. The SRJC fulfills this requirement. The Clinical experience required is 4416 hours under the supervision of a veterinarian and includes a list of specific job tasks that must be completed. The SRJC program includes the Academic component only and it is up to the student to meet the clinical requirement.

The Veterinary Technician Program offers an annual seminar on the admissions requirements and pathways to Veterinary School. This is followed by a unique tour of the UC Davis School of Veterinary Medicine which includes touring the Anatomy Lab, Surgery Lab, the teaching Hospital, meeting the admissions staff and sitting in on a few veterinary school lectures. We are the only community college in the state offering this opportunity.

Several partnerships have been developed over the last few years.

- The Small Animal Emergency Medicine class is now offered every odd Spring Semester. This class is held at Animal Care Center, the largest veterinary emergency center in the county. This class included over a dozen guest speakers from both Animal Care Center and Petcare emergency veterinary hospitals. It has become the most popular elective in the program.
- In order to provide hands-on class activities with live animals the program now partners with several local rescue groups: Bergin University for Canine Studies (formerly Assistance Dog Institute), Pets As Loving Support therapy dogs, cats from two local non-profit rescue troupes, and Reading Therapy Dogs from another group. Animals from Sonoma County Reptile Rescue are also used in a single class per semester.
- Through cooperation with Paws Are Loving Support and the Humane Society of Sonoma County we have put on a free vaccine clinic for the pets of AIDS patients. This is the capstone experience of the Small Animal Nursing (AnHlt120) course. This is a win/win/win situation where the SRJC students gain valuable experience, PALS and their pets get preventative medical care, and the Humane Society is provided with a labor force to make this event possible.

- Cooperation with the shelters in the county continues with students volunteering or working in 5 different animal shelters including the continued intern program at Sonoma County Animal Care and Control helping this municipal shelter and giving students hands on experience in a variety of capacities including animal intake, spay/neuter clinic support, etc.
- Since Fall 2010, the SRJC program offers a job shadowing rotation where students are invited to observe and participate in a variety of different veterinary clinical settings. This semester long weekly rotation has exposed 12 to 15 students per semester to hospitals including: Eye Care Center for Animals, Humane Society of Sonoma County, Large Animal Hospital of Cotati, Memorial Beach Animal Hospital, Montecito Animal Hospital, PetCare, VCA Animal Care Center, VCA Forestville, and Bradner Veterinary Hospital among others.

There has been minimal change in outside funding. The Redwood Empire Veterinary Medical Association has pledged to contribute \$500 year to fund an annual scholarship that would allow a Veterinary Technician student to sit for their Board Exams. Additionally, the Association now holds their annual Continuing Education event for veterinarians at the SRJC Shone Farm. For the 2010-2011 year, Dr. Famini received \$21,410 in CTEA funding and \$7,000 in 2012-13 for Vet Tech instructional equipment.

Historically no local venue existed for working RVTs to communicate or gain a perspective of their profession outside the walls of their own clinic. Additionally, as of July 2011 there is mandatory CE requirement for RVTs. To remedy these two problems Dr. Dan Famini founded the Redwood Empire Veterinary Technician Association. Since July 2011 this organization has held monthly CE and networking meetings with 50-80 attending RVTs and veterinary support staff. There is now a 11 person Executive Board consisting of 10 RVTs and Dr. Famini, with an all RVT officer team taking this project forward.

EQUINE SCIENCE

Current estimates place 6.9 million horses in the United States involving 7.1 million Americans in diverse, sophisticated and high tech positions that annually employ 1.4 million full-time employees in all regions of the country. These people serve the industry, providing over \$2.5 billion in goods and services annually. This relates to a total impact of \$112.1 billion on the US Gross domestic product. In Sonoma County, the value of agricultural production and household horse-riding activities amount to 468 million dollars, almost one quarter of the value of Sonoma County farming. Horses are Sonoma County's #2 agricultural industry. Current production and market indicators suggest that the equine science industry will continue to experience growth. Areas for growth in the industry include breeding, training, and maintaining horses, operating tracks, show and recreational facilities as well as numerous ancillary activities. These include feed, tack, equipment, and real estate sales, legal services, art, photography and literature. Students who have earned a degree at Santa Rosa Junior College with a major in Equine Science are more than qualified for a wide variety of diverse careers in the equine industry.

California community colleges that offers Equine Science courses include Modesto College, Sierra College, College of the Sequoias and Shasta College. These insititutions, however, do not offer full certificates or majors in Equine Science, like

SRJC. The only other California community college which offers a full degree in equine science is Feather River College in Quincy. This program offers a markedly different program than SRJC however, as it is geared towards competitive rodeo and backcountry horsemen. SRJC's program, in contrast, is a broad technical study of all phases of equine business and management practices, coupled with general studies to produce graduates that are well rounded individuals capable of entering all phases of the equine industry. Another thing that sets SRJC's Equine Science program apart from all other colleges in the nation, is our therapeutic riding program. Recognized as one of the most progressive forms of therapy, therapeutic riding offers students with disabilities the ability to control a horse as well as one's own body. The college offers courses for training in therapeutic riding, as well as courses for riders that work to increase balance, muscle control, strength, concentration, patience, responsibilities, and teamwork. No other community college in the nation has a therapeutic riding program.

With the exception of the therapeutic riding program being certified by the North American Handicapped Riding Association, there are no outside requirements for licensing/accrediting EquineScience at SRJC or these other institutions.

In 2010, CTEA funding was used to acquire a hotwalker, with installation by Shone Farm. Additionally in 2011, the Equine Science program obtained \$21,000 in funding from the CalRecycle Tire Derived products program for shredded rubber and stall mats for use in the equine unit and beef unit.

ANIMAL SCIENCE

World food demand for food of animal origin will double in the next 25 years in order to feed an expected population of 9.1 billion. Trends in the animal science industry show an increase in vertical integration with a decrease in the number of producers, but larger sized operations; increased specialization to improve efficiency; increased geographic concentration. The above needs will need to be achieved while minimizing the costs to animals, environment and humans. Current SRJC courses, certificates, and majors are designed to meet these trends.

Employment trends show an average increase in the need of Animal Science graduates by 12.9%. Currently, 6.4% of all animal scientists have a professional degree, 23.5% have a doctoral degree, 21% have a master's degree, and 35% have a bachelor's degree. Only 5.3% have an associates degree. Due to these demographics, the majority of SRJC's animal science offerings are geared towards the transfer student. In Fall 2011, the Animal Science Coordinator, with advisory committee input, determined that based on employment options, the Animal Science certificate was no longer necessary.

Animal Science associates degree students served Santa Rosa Junior College are helping to produce the increased value of animal agriculture production in California; between 2000 and 2010 there was a boost of more than \$3.2 billion in total economic output from animal agriculture for the state. This growth increased household incomes by more than 17,000 jobs, according to a report funded by the United Soybean Board. At the national level, the study found that the rise in value of US animal agriculture production in the last decade resulted in more than \$22 billion in total economic output. This produced a nearly \$4 billion increase in household incomes and 128,700 jobs.

In 2010, the total economic impact of animal agriculture in California was more than \$19 billion, compared to \$289 billion nationally. The effect on household earnings was \$3.6 billion in the state and \$51 billion nationally. Animal agriculture contributed 101,178 California jobs and more than 1.8 million jobs to the US economy.

The average animal scientists has a starting salary of \$31,540. The average salary earned is \$53,230.

California community colleges that offer Animal Science programs include Modesto College, Merced College, West Hills College, College of the Sequoias, Reedley College, Shasta College, and Bakersfield College. There are no outside requirements for licensing/accrediting of Animal Science programs for SRJC or any other community college institutions. In the coming year however, due to the growing concern for animal welfare it may necessary to investigate the development of an Animal Care and Use Committee for Shone Farm.

There has been minimal change in outside funding. Partnerships have been developed with community members for leasing of breeding animals, in order to preserve the limited livestock budget.

VITICULTURE

Winegrape production in Sonoma County totals over four hundred million dollars annually and accounts for the greatest revenue of all agricultural crops in the county (Figures from Sonoma County Ag Comm Office 2010 Crop Report can be found at http://www.sonoma-county.org/agcomm/crop_report.htm). About 73% of Sonoma County's agricultural production is growing wine grapes—60,302 acres of vineyards, with over 1100 growers.

The long-term outlook for the wine industry is positive as demographic trends suggest the consumer market will remain strong. In 2012, the Wine Institute reported a record 5.6 percent increase in cases of California wine sold in the U.S., compared to the previous year. The estimated retail value of the shipments totaled nearly \$20 billion, according to figures that institute released. During the same period, U.S. wine exports – 90 percent of which came from California – reached a new record of \$1.39 billion in winery revenues in 2011, an increase of 21.7 percent compared to 2010. 120,000 new wine labels were approved last year by the U.S. Tax and Trade Bureau.

Total wine sales in the U.S. from all production sources – California, other U.S. states and foreign countries – climbed to a new record of 347 million cases, a 5.3 percent jump from 2010, with an estimated retail value of \$32.5 billion, John Fredrickson of Gomberg Fredrickson & Associates reported, marking the 18th consecutive year of volume growth in the U.S. California's nearly 212 million cases held a 61 percent share of the U.S. market.

Additionally it should be noted that Sonoma County's reputation as a major wine producing area will grow over the next several years as a result of recent legislation and marketing efforts. A state requirement that wines produced in the county include the phrase "Sonoma County" along with its American Viticulture Area was signed into law in

fall 2011 and will go into effect in 2014. Similar laws are credited with increasing the profile of other California wine growing areas (including neighboring Napa County) resulting in an increase in viticulture productions.

Partnerships: Partnerships exist between the SRJC Viticulture program and local wineries purchasing fruit from Shone Farm Vineyard. Dependent upon contract negotiations, these wineries include Benzinger, Rodney Strong, Merry Edwards, La Crema, Arrowwood, Korbel, Clos Du Bois, and Sonoma Cutrer. Also the Sonoma County Winegrape Commission has been conducting workshops and trainings at the Shone Farm and SRJC viticulture students have been invited to participate at no charge.

Increase of funding from Sonoma County Vineyard Technical Group for some specialized pieces of equipment for Viticulture classes has been provided. Additionally the Sonoma County Winegrape Commission has provided a weather station for Shone Farm, which serves as a resource for all of Sonoma County as well as an educational tool for students.

Napa Valley College and Allan Hancock College provides a certificate or major in viticulture.

NATURAL RESOURCE MANAGEMENT

Natural Resource Management is a rapidly growing field, particularly in light of challenges to our environment like global warming, exponential population growth and potentially dangerous carbon emissions.

Environmental scientists work to find ways to meet and overcome those challenges, in order to maintain a livable environment for generations to come.

The jobs available to natural resource management graduates is diverse and in a wide range of settings. The U.S. Bureau of Labor Statistics lists some of the tasks handled by these professionals: Monitoring watershed, finding ways to preserve water supplies, writing policies to preserve natural resources, consulting with companies to help them become more environmentally responsible, working with government entities to develop regulations and ensure they are followed. Scientists in this field often have backgrounds similar to those that work in physical or life science, but their focus is on environmental issues. Most that come into this field have a strong math and science background, and a minimum of a two-year degree in natural resource management to get into an entry level position. The U.S. Bureau of Labor Statistics predicts the field of natural resource management to grow at a much faster than average pace over the next few years.

Example of anticipated career changes for natural resource management include:

Forestry Technicians: Expected growth of 9% over 2008-18 as more land is set aside to protect natural resources or wildlife habitats. Also, more jobs may be created by recent Federal legislation designed to prevent destructive wildfires by thinning the forests and by setting controlled burns in dry regions susceptible to forest fires.

Parks and Recreation: Employment of recreation workers is projected to increase by 15 percent between 2008 and 2018. This growth is being driven by an increased interest in the "No Child Left Inside" program, which is fueling civic and social organizations and fitness and sports centers to increase their outdoor recreation activities.

Other Community Colleges offering Natural Resource Management programs in California include Truckee Meadows Community College, Reedley Community College, Shasta College, De Anza College, American River Community College, Butte Community College and Feather River Community College. Four year institutions in California that SRJC graduates transfer to in Natural Resource Management include UC Davis and Santa Cruz, and CSU Chico, Humboldt, Bakersfield, and Channel Islands. Numerous SRJC courses articulate with these four year institutions.

Licensing/accrediting agencies related to SRJC's Natural Resource Management program include the Seasonal Law Enforcement Park Ranger Academy – Windsor Training Center (recommended).

Partnerships or cooperative ventures existing with local employers include: Sonoma County Agricultural and Open Space District, Sonoma County Regional Parks, U.S. Army Corps of Engineers, North Bay Conservation Corps, National Park Service and Forests Unlimited.

SUSTAINABLE AGRICULTURE

Now that organic food has a nationally recognized production standard and is overseen by the United States Department of Agriculture, organic food has become legitimized in America as sales steadily climb. The number of certified organic farms and processing facilities in the United States increased nearly 3 percent from the end of 2010 to the end of 2011, with California still leading the nation with the most organic operations, according to the U.S. Department of Agriculture. USDA database shows a total of 17,673 U.S. farms and processing facilities were certified to the standards of the National Organic Program as of the end of 2011. That's 478 more operators than the end of 2010. The current total is also a 240 percent increase since the program started tracking that information in 2002. The database shows California has 3,853 certified organic operations. That's compared to 2,714 organic farms in 2008, although that number comes from the USDA Census of Agriculture and includes farms that are certified and exempt. U.S. Deputy Secretary of Agriculture Kathleen Merrigan said USDA has been working to increase the number of certified organic operations in the nation by 20 percent by 2015. Starting from the 2009 baseline of 16,564 operations, she said the goal is to hit a total of 20,655 certified operations in another three years.

With such a rapidly growing market in Sustainable Agriculture, there are multiple areas that offer interesting employment options to students who are prepared in SRJC's Sustainable Agriculture program. Employment opportunities upon completion of the SRJC Sustainable Agriculture program may include:

- Farm owner
- Niche grower of specialty produce, flowers, herbs, fruits and nuts
- Farm or garden manager - field or office
- Farming / Gardening consultant - private or company employee
- Seasonal Farm intern / apprentice (plant, irrigate, weed, harvest)
- Farmer's Market manager / assistant and/or vendor
- Retail/Wholesale nursery production (greenhouse/sales)
- Farm Advisory and/or research assistant with County Ag Commissioner, Cooperative Extension or United State Department of Agriculture
- School Garden coordinator
- Compost production and sales

- Organic support/sales and services (fertilizers, seed, equipment, etc...)
- Sustainable livestock production / Range or ranch manager
- Chef/restaunteur
- Pest control advisor
- Public garden / botanical garden employee
- Farm/Garden estate caretaker
- Agriculture teacher
- Value-added product creator (ie. wreaths, jams, brewer, tincture, oils, etc...)
- Nursery grower/worker of container vegetables, herbs, bare-root fruit trees

Santa Rosa Junior College is the only community college in California that offers an A.S. degree and two certificates in Sustainable Agriculture. Some of the curriculum is aligned with lower division Sustainable Agriculture major preparation at UC Davis, UC Santa Cruz, Cal Poly, and other universities.

Licensing/accrediting agencies related to Sustainable Agriculture programs are optional. Certifications can be obtained if desired in CCOF, Sustainably Farmed, Humane Farmed, Biodynamically Farmed, etc...

There has been a substantial increase in grant funding. One grant acquired by the Sustainable Agriculture program for 2010-2011 was a Felton Foundation Grant for \$25,000. Additionally, a USDA Farmers Market Promotion Program grant was awarded in 2011 in the amount of \$67,719 over 2 years, aimed at promoting Shone Farm products. Additionally, the Ag Department, the SRJC Small Business Development Center and the Latino Service Providers collaborated with the University of California Cooperative Extension (the lead agency) on a \$750,000 grant aimed at training beginning future ranchers and farmers. The USDA Beginning Farmers and Ranchers grant will run for 9 months starting March 2012. The final grant awarded in the Sustainable Agriculture program came from the CCC Chancellor's Office. This \$47,000 Collaborative Sustainable Agriculture Grant is aimed at providing elementary school children exposure to sustainable agriculture. Funding will be used to provide visits to Shone Farm and a 2 week long intensive summer academy.

WINE STUDIES

The Wine Studies program has four emphases: Wine Evaluation & Service, Wine Business & Marketing, Enology, and Wines & Vines. The program prepares students for a variety of positions in the wine industry, such as: grower relations manager, viticulture wine quality specialist, winery laboratory assistants, cellar masters, assistant winemakers, winery education directors, wine quality control specialists, sensory evaluation personnel, wine sales specialist, wine club administrator, sales manager, public relations and marketing coordinator, and wine merchandiser.

In 2012, the Wine Institute reported a record 5.6 percent increase in cases of California wine sold in the U.S., compared to the previous year. The estimated retail value of the shipments totaled nearly \$20 billion, according to figures that institute released. During the same period, U.S. wine exports – 90 percent of which came from California – reached a new record of \$1.39 billion in winery revenues in 2011, an increase of 21.7 percent compared to 2010. 120,000 new wine labels were approved last year by the U.S. Tax and Trade Bureau.

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Numerous SRJC Wine Studies courses are articulate with UC/CSU viticulture and enology programs.

Napa Valley College, Allan Hancock College, and Las Positas provide degrees, or certificates in the same discipline. Additionally it should be noted that there are a number of private Wine Studies programs.

There are no requirements of licensing/accrediting agencies related to wine studies. There are future plans to create some wine sommelier accredited licensing certificates.

Efforts are underway to expand opportunities for students to become involved in the Shone Farm Winery, assisting the winemaker with all aspects of the operation, from production to marketing and distribution.

ENVIRONMENTAL HORTICULTURE

Increased interest in the quality of the environment, conservation, and restoration projects has stimulating growth in the horticulture industry over the last several years. California's environmental horticulture industry leads the nation with 21.9% of total nursery production and 8.6% of lawn and garden retail sales. California represents over a quarter of U.S. wholesale nursery production and retail sales, creating a total of 192,065 California jobs. 74,940 jobs come from production, 76,225 jobs from lawn and garden retailing, and 40,900 result from indirect and induced effects. The total payroll exceeds \$5.58 billion, with \$2.52 billion from floral and nursery production and over \$3.05 billion from lawn and garden retailing. Combined, nursery and floriculture are California's #2 agricultural commodity, producing 9.1% of the state's total agricultural output. Nursery products, flowers and foliage are produced in 55 of California's 58 counties. Nursery stock is a number one crop for 12 California counties, reporting sales of over \$100 million/county.

Nevertheless, due to the economic downturn, particularly in the construction industry, the current job market is difficult. EDD labor market information data projects a 9.6% increase in Landscaping and Groundskeeper Supervisor positions for 2008-2018 in California and a 9% increase in Sonoma County. For Landscape Groundskeepers and Workers, the projection is a 14% increase in California and a 14% increase in Sonoma County.

The employment outlook for the category of Farmworkers, Laborers, Crop and Nursery Workers in California is flat with a -.1% change. In Sonoma County, a 4.49% increase is projected. The Environmental Horticulture Advisory Committee confirmed the weakening job market in the nursery industry and the value and need for the two nursery certificates will be assessed in the coming year.

Longer term, as the economic recovery continues, the landscape field should strengthen. Private and commercial property values are enhanced by professionally designed landscapes, and the services of large and small landscape firms should return

to be in high demand. In addition, a significant number of independent, entrepreneurial landscape/garden designers offer services throughout the county.

Graduates who possess landscape management skills are qualified to advance into supervisory and management positions within landscape contracting firms, design or landscape construction companies, municipal, state, county, and federal agencies, entrepreneurial landscape maintenance enterprises, and other occupations that require the application of plant knowledge, drafting/design, irrigation design, and landscape construction skills.

There are multiple areas that offer interesting employment options and starting pay to students who are prepared by SRJC's Environmental Horticulture program, including:

- Wholesale nursery propagator (\$15-40/hr)
- Wholesale nursery grower (\$10-25/hr)
- Field Superintendent Manager (\$30-45/hr)
- Sales Manager (\$15-20/hr)
- Marketing Manager (\$20-30/hr)
- Floral Designer (\$35-50/hr)
- Landscape Contractor (\$50-80/hr)
- Landscape Designer (\$35-75/hr)
- Irrigation Designer (\$75/hr)
- Private Horticulture Consultant (\$50/hr)
- Certified treeworker (\$25-40/hr)
- Park Superintendent (\$35-50/hr)
- Project Supervisor (\$20-30/hr)
- Landscape Estimator (\$50/hr)
- Foreperson (\$10-22/hr)
- Crew Leader (\$10-22/hr)
- Landscape Gardener(\$10-15/hr)
- Salesperson (\$15-20/hr)
- Integrated Pest Management specialist (\$50-70/hr)
- Salesperson retail florist (\$20-35/hr)
- Instructor (\$30-50/hr)
- Landscape Design Assistant (\$15-20/hr)

The variation of salaries is dependent upon the level of education, type of employment, specific job tasks and skills. Experienced workers typically earn \$10-22 /hr.

Management and supervisory positions have the greatest earning at \$3,500 to \$5,500 per month. Owners/operators of many landscape maintenance businesses earn between \$4,500-8,500 per month. Many residential landscape installation contractors earn between \$150,000 -500,000 per year, gross income.

Environmental Horticulture programs can be found at the following community colleges: Cabrillo College, Foothill College, Santa Barbara City College, Reedley College, Modesto Junior College, Butte Community College, College of the Sequoias and Antelope Valley Community College.

Numerous SRJC Environmental Horticulture classes articulate with the CSU (Cal Poly and Fresno) and UC system (UC Davis).

AGRICULTURE BUSINESS MANAGEMENT

Agribusiness accounts for nearly one-fifth of the U.S. gross national product and employs close to one-fourth of the labor force. This sector includes numerous firms supplying inputs to production agriculture, enterprises producing food and fiber

products, companies that process and market these products, and others. During the past decade, there have been overwhelming changes that have affected every phase of the industry. On the domestic scene, there is the consolidation of farms and ranches into larger, more efficient operations that are increasingly industrialized and require more sophisticated management. New technologies, the ascendancy of environmental and nutrition awareness among consumers and the influence of U.S. and foreign policies on agricultural support and trade effect the way the industry does business. Perhaps the most momentous change in the past ten years, however, is the increasing globalization of agriculture.

A recent USDA report finds that there will not be enough qualified individuals to fill all the agricultural business positions over the next few years. Ag Business majors find jobs as loan officers, bank vice presidents, lobbyists, computer service representatives, accountants, sales managers, real estate appraisers, marketing representatives, export trade managers, farm managers, personnel specialists, labor contractors, public relations specialists, as examples.

Most of the students enrolled in Ag Business courses intend to transfer. There are articulation agreements with four year institutions (Cal Poly, Fresno, Chico, Stanislaus, UC, Davis, Sonoma State). Few students, however, complete the certificate. In developing the Ag Master plan, it was determined that the majority of ag students do need core skill sets that include a foundation in basic business, including accounting, computer skills, marketing, using social networking, entrepreneurial skills, as examples. As a result, the Ag Business certificate will be reviewed for possible reconfiguration into certificate that meets of those students who plan on directly entering the work force.

In Summary

In light of all these positive employment trends student enrollment in the Ag/NR Department continues to be high. The department anticipates this trend to continue and will need to work closely with the administration to avoid too drastic of a schedule reduction. Many Ag/NR classes are already over-enrolled and given the size of classrooms, laboratory requirement of most Ag/NR classes, lack of full time laboratory support staff, it is not possible to increase these any further. Much of what the department would like to do in terms of expansion and interdepartmental collaboration will only be possible with permanent staffing support.

5.11b Academic Standards

The Ag/NR Department meets annually to discuss academic standards ensuring that coursework is reflective of CC/CSU/UC level work.

6.1 Progress and Accomplishments Since Last Program/Unit Review

Rank	Location	SP	M	Goal	Objective	Time Frame	Progress to Date

6.2a Program/Unit Conclusions

Location	Focus Areas & Questions
Other	
ALL	Having an Agriculture/Natural Resources Dean with a background in agriculture has been transformative for the department. There is renewed energy and vision toward a bright future for the department

6.2b PRPP Editor Feedback - Optional

In Spring 2011, the Ag/Natural Resources Dept completed a comprehensive planning process to determine how to best serve the educational needs of their students now and into the future. A business strategy for Shone Farm was also developed, outlining short and long-term goals for revenue enhancement.

6.3a Annual Unit Plan

Rank	Location	SP	M	Goal	Objective	Time Frame	Resources Required