Comprehensive Program Review Report (Narrative)
College of the Sequoias
Program Review - Animal Science

What are the strengths of your area?:
1. The addition of a new full-time animal science faculty member with expertise in meat animal production.
2. Having new facilities for equine, bovine, swine, and ovine with opportunities to utilize them for classroom experiences.
3. Our new location is located where animal agriculture is the pivotal industry represented in Tulare county.
4. All courses have assessments entered and all courses (based upon three year rotation cycle) have had assessments reviewed and updated.
5. Reciprocity with CSU campuses to allow students to successfully transfer upon completion of their program. Animal Science Transfer Model Curriculum (AST) is being developed currently for CSU Schools.
6. Strong advisory support with multiple meetings (3 to 4) per year.
7. Our course completion rate is above the state average at 80%.

What improvements are needed?:
1. Concentrate on the sequencing and clarity of class offerings to assist the counseling staff that will assist in Student Educational Plans (SEP), which will increase the ability for program completers.
2. Improving relationships with local high school agriculture programs to make them aware of the vast opportunities in animal science, and the viability of the COS program.
3. Increasing the number of certificates and transfer students to UC and CSU campuses because many animal science careers require four year degrees today.
4. Increasing efficiency (currently at 378 and the 2025 goal is 400) is a long term goal for the animal science department. This is hindered due to the safety issues concerning laboratories and the strategic planning of creating more laboratory sections with fewer students. This could be improved with the addition of a laboratory technician to increase safety and efficiency of students.
5. Facility design, with specific emphasis on: 1) Swine Barn/Farrowing Lab, 2) Lack of Animal Processing (Working) facilities attached to the sheep and beef barns, and 3) Pasture shades in all animal units and 4) Shades for the bleachers in the Horse Arena. The facility issues limits our Program Level Outcomes (PLO's) as we are not demonstrating proper biosecurity, herd management, and animal health and welfare practices per industry standards. Specific student learning outcomes (SLO's) are hampered in ASCI 001, ASCI 002, and ASCI 110 in the swine unit. These SLO's are limited because facilities are not currently designed to allow sows to be placed in the farrowing barn year round.

1. Continuing training for animal science instructors in modern artificial insemination and protocols. Changes in industry require that faculty have continuous training in order to maintain relevance of curriculum and laboratory practices.
2. Livestock shades in the animal pastures are needed for livestock to be maintained in a healthy environment. Moreover, students have no shade and therefore are experiencing health issues when laboratory labs are held at the equine arena.

4. The new swine facility was built without proper ventilation and manure management. Ventilation is necessary for production and health practices that we are implementing in our Animal Science labs. Proper ventilation of the swine barn includes providing ventilation in the roof and farrowing house to allow for proper air flow. The manure run off system needs to be altered by enlarging the opening of the wall for manure run off and larger piping.
5. The need for a livestock processing facility is needed for proper management of livestock. This will aid in the laboratory exercises with students and allow for student success and SLO's. Additionally, student safety is being compromised in laboratories.

Describe any external opportunities or challenges:
The new animal science units have brought tremendous external opportunities as mentioned in improvements needed. Industry partners are excited to offer our students sponsored activities at our new animal science units. These opportunities include but are not limited to the following events:

1. 2013 San Joaquin Valley Holstein Sale
2. Local swine producer and Reedley College swine program partnered with COS swine program for laboratory animals.
3. Local beef, equine and sheep producers partnering with program for breeding animals.
4. Proposed livestock showing fitting symposium.
5. Proposed Livestock show and judging contest.
6. County wide 4-H livestock judging contest.
7. Intercollegiate Horse Show Association horse shows.
8. Partnering with Dairy Experts with instructional unit use and student participation.
9. Sponsor multiple FFA activities.

Overall Outcome Achievement: Overall performance in the animal science program for both SLOs and program learning outcomes (PLO's) are on track to meet industry demands for new entry level positions. Review of assessments have occurred in all relevant courses, and continue to show that students are meeting course goals at a threshold of 70% level or higher. Program learning outcomes indicate that students are succeeding at or above college average. (See assessment results and improvements for ASCI 123, ASCI 124, 125 and 126 for the 2013 and 2014 academic years.)
ASCI 104 and ASCI 111, and the animal science certificate). The greatest improvement recommended in the assessment cycle was the addition of a full-time animal science faculty member who started in August. As this is the first program review for the animal science department we have no previous year’s data or patterns to address.

**Changes based on outcome**

After reviewing the results of the outcome assessments and identifying the strengths and weaknesses, the animal science faculty have identified the following potential ways to support and improve student achievement in the animal science program.

1. New resources have been identified that will allow laboratories to better serve students and improve their outcome assessment.
2. Faculty proposes minor changes to assessments that will allow students to demonstrate more accurately their industry-based skill levels.

**Outcome cycle evaluation:**

The animal science department has assessed all courses and reviewed all assessments as listed in Trackdat for Fall 2013 and Spring 2014. Courses for assessment in Fall 2014 and Spring 2015 are ASCI 104, 123, 105, 110. The certificate for ASCI and EQUINE shall be assessed and evaluated in Fall 2014 and Spring 2015.

**Action: Increase Continuing Education**

Continuing Education for faculty to learn up-to-date animal science reproduction skills to instruct students on the most current industry standards.

**Implementation Timeline:** 2014 - 2015

| Start Date: | 09/01/2014 |
| Completion Date: | 05/30/2015 |
| Status: | New Action |

**Identify related course/program outcomes:**

- **ASCI 123 Horse Production:**
  
  Course Outcome:
  
  1. Given a bred mare or reproductive scenario, students will be able to demonstrate understanding proper equine care from gestation through foaling. This will include applying record management to equine health decisions. The student will be evaluated in this area by demonstrating his/her problem-solving ability with a production scenario problem to include health and reproduction. The student must consider all possible management decisions to classify the problem.

- **ASCI 110 Swine Production:**
  
  Course Outcome:
  
  1. Upon completion of this course, students will be able to list and define accepted practices for selecting and maintaining a breeding herd of swine.

- **ASCI 111 Beef Production:**
  
  Course Outcome:
  
  1. Upon completion of this course, students will be able to explain and demonstrate basic breeding, selection practices for beef cattle.

- **ASCI 112 Sheep Production:**
  
  Course Outcome:
  
  1. Upon completion of this class, students will be able to describe and implement a breeding program for the production of lambs.

**Person(s) Responsible (Name and Position):** Kim Pitigliano and Russell McKeith - Animal Science Faculty

**Rationale (With supporting data):**

Proper training for current knowledge regarding standard industry reproduction techniques is essential to give students proper training to prepare them for employment in the equine/livestock industry. New animal science facilities in Tulare offer the opportunity for students to have hands-on education utilizing the most current and novel methodology. The Animal Science and Equine advisory committees strongly recommend staying on the cutting edge with modern reproduction techniques, and believe it is essential in utilizing these facilities to their best educational advantage.

**Priority:** High

**Safety Issue:** Yes

**External Mandate:** No

**Mandate Explanation:**

This area of animal production (AI/embryo transfers) is constantly evolving and changing because of industry's investments in new reproduction technology. For the animal science program to maintain current with industry standards, training must be given to instructors to be able to teach the most modern techniques for reproductive success.

### Add Resource Request for Action

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<tr>
<th>Resource Description</th>
<th>Why is this resource required for this action?</th>
<th>Notes (optional)</th>
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<tbody>
<tr>
<td>Funding for classes. Classes that are needed for current industry practices include:</td>
<td>Funding is required because industry training is offered via private companies and training entities.</td>
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<td>Artifical insemination procedures (including deep horn insemination), embryo transfer,</td>
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<td>frozen and cooled semen, as well as proper bull, ram, boar and stallion handling.</td>
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<td><strong>Resource Type:</strong></td>
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<tr>
<td>Technology</td>
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**Action: Animal Health and Student Safety**

Health and safety of animals and people (students and faculty)

**Implementation Timeline:** 2014 - 2015

**Start Date:** 08/18/2014

**Completion Date:** 05/01/2015

**Status:** New Action

**Identify related course/program outcomes:** ASCI 022, 123, 124, and 140. Course outcomes:

1. Students will foal out a mare, enter correct bookkeeping, and learn neonatal and mare care.
2. Given safety expectations and consequences, students will be able to analyze and apply techniques and practices to proper safe animal handling. Compliance in this area shall be based upon a safety exam with each student passing at the 100% level.
3. Given a lecture, discussion, evaluation and laboratory activity, students will be able to demonstrate safe halter, leading, and tying of a young horse.

**Person(s) Responsible (Name and Position):** Kim Pitigliano and Russell McKeith-Animal Science Faculty

**Rationale (With supporting data):** Proper management of livestock at our instructional units requires that animals be provided ample shade in the pasture. All modern livestock facilities follow this industry standard, and is needed especially in warmer climate regions. Additionally, students taking equitation classes at the new equine facility have suffered from heat and sun exposure. For human health and safety there should be shades over the bleacher area of the equitation arena. This is necessary for students to be present, as well as utilize the equine riding arena to its fullest potential.

**Priority:** High

**Safety Issue:** Yes

**External Mandate:** No

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<td>Funding for material for construction of equine shades and bleacher shades.</td>
<td>Funding is needed for the material (welding shop will do construction) for the shade structures for proper management of horses and for safety of the students when using the equine arena.</td>
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<td><strong>Resource Type:</strong></td>
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<tr>
<td>Faculty- New/Replacement</td>
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**Action: Current facility improvements for student success**

Improve animal and student health and safety by improving the swine facility animal health.

**Implementation Timeline:** 2014 - 2015

**Start Date:** 09/01/2014

**Completion Date:** 05/29/2015

**Status:** New Action

**Identify related course/program outcomes:** The following animal science classes utilize the swine instructional unit for classes: ASCI 001, ASCI 002, and ASCI 110

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ASCI 001
1) Upon completion of this course students will be able to list and define pathogen transmission in the food chain and list measures to prevent incidence of disease in livestock.
2) Upon completion of this course students will be able to demonstrate the proper use of techniques to optimal survival of pre-weaned piglets.
3) Upon completion of this class students will be able to identify and suggest treatment and prevention for most common swine diseases and parasites.
4) Upon completion of this course, students will be able to complete a cost analysis and feasibility study of facility designs for the production of swine.

ASCI 002
1) Upon completion of this course students will be able to list and identify traits that are most economically important to the given production scenerio.

ASCI 001, ASCI 002, ASCI 110
1) Upon the completion of this course students will be able to discuss the process of meat animal growth, development and finishing of swine.

Person(s) Responsible (Name and Position):
Russell McKeith

Rationale (With supporting data): The ventilation system currently at the swine facility is inadequate and potentially fatal to farrowing pigs. There is an increased risk for disease and animal welfare at all stages production. The manure runoff system currently at the swine facility is inadequate and potential fatal to all aspects of swine production. Similarly, there is an increased risk for disease and animal welfare at all stages production. Moreover, student safety can be compromised with excess manure buildup.

Priority: High
Safety Issue: Yes
External Mandate: No

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<td>Modifications to the current swine facility need to be made to improve the manure run-off system and ventilation in the farrowing barn. The manure run-off system is not adequate and will only support a small number of pigs. Additionally, there is no ventilation in the farrowing barn. Vents need to be added to the farrowing room to increase airflow.</td>
<td>This resource is needed because animal health is currently being compromised at TCC. When swine are farrowing adequate airflow and temperature is needed to ensure the piglets do not die. Additionally, excess manure build-up can increase the prevalence of pathogenic exposure and transmission bacteria.</td>
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<td>Yes</td>
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Resource Type:
Facilities

Action: Animal Working Facility
Improve safety of people (students and faculty) and the livestock

Start Date: 09/01/2014
Completion Date: 06/30/2015
Status: New Action

Identify related course/program outcomes:
The following classes the animal science technician would assist with: ASCI 001, 002, 022, 103, 110, 111, 112, 123, 124, and 141.

Identification of course outcomes ASCI classes:
1. Upon the completion of this course students will be able to discuss the process of meat animal growth, development and finishing.
2. Upon completion of this course students will be able list and define accepted practices for selecting and maintaining a breeding herd of swine (ASCI 111).
3. Upon completion of this course students will be able to list, explain, and demonstrate basic management practices for beef cattle production.
4. Upon completion of this course students will be able to list, explain, and demonstrate basic management practices for equine production.
5. Upon completion of this course students will be able to list, explain, and demonstrate basic management practices for sheep production.

Person(s) Responsible (Name and Position):
Kim Pitigliano and Russell McKeith-Animal Science Faculty

Rationale (With supporting data): Currently, the instructional units have no where to properly work animals (giving vaccinations, weaning, processing livestock). Moreover, student safety is compromised during laboratories due to insufficient facilities.

Priority: High
Safety Issue: Yes
External Mandate: No
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<td>To construct a new facility where cattle can be properly worked, handled, weighed and given shots. This type of facility is standard in most types of livestock operations. Additionally, this facility could be added next to the current pastures at the TCC Livestock Instructional Units.</td>
<td>Currently student safety is compromised when conducting these types of activities. Students have already been hurt this semester working livestock. These activities are critical to the understanding and skill base of livestock production.</td>
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<td>Resource Type:</td>
<td>Facilities</td>
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Action: Equipment for student activities

Purchase equipment for student lab activities that incorporate student learning outcomes related to livestock handling, halter breaking and proper exhibition skills.

**Implementation Timeline:** 2014 - 2015

**Start Date:** 09/01/2014

**Completion Date:** 05/25/2015

**Status:** New Action

**Identify related course/program outcomes:**
- ASCI 001: Upon completion of this course students will be able to restrain, move and safely monitor livestock from the pen to the trailer.
- ASCI 002: Upon completion of this course students will be able to combine subjective and objective means of livestock evaluation.

**Person(s) Responsible (Name and Position):**
- Russell McKeith - Animal Science instructor

**Rationale (With supporting data):**
With the hiring of a new animal science instructor, students will have more opportunities to enhance their animal science skills through activities such as a livestock judging team. Equipment is needed to teach students proper handling, showing and evaluation techniques.

**Priority:** High

**Safety Issue:** Yes

**External Mandate:** No

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<td>Safe handling equipment for livestock related student activities</td>
<td>Safe equipment is needed to properly instruct students for handling, showing and evaluating livestock.</td>
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<td>Resource Type:</td>
<td>Instructional equipment</td>
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Action: Program Continuity

To increase student's "hands-on" learning success, as well as enhance animal instructional unit success, it is imperative to hire an animal science technician. This action will elevate the animal and equine science programs to the next level.

**Implementation Timeline:** 2014 - 2015

**Start Date:** 08/01/2014

**Completion Date:** 05/30/2015

**Status:** New Action

**Identify related course/program outcomes:** The following classes are the classes the animal science technician would assist with: ASCI 001, 002, 022, 103, 110, 111, 112, 123, 124, and 141

**General Course Outcomes ASCI classes**
1. Upon completion of this course, students will be able to list, define and describe function of all parts of three common livestock digestive systems.
2. Upon the completion of this course, students will be able to discuss the process of meat animal growth, development and finishing.
3. Upon completion of this course, students will be able list and define accepted practices for selecting and maintaining a breeding herd of swine.
4. Upon completion of this course, students will be able to list, explain, and demonstrate basic management practices for beef cattle production.
Rationale (With supporting data): Student safety is a huge concern for students studying animal and equine science. The addition of an animal science technician would enhance the safety of the students by having an additional instructor help with class laboratories. It is known that animals can be unpredictable, and proper handling is necessary to maintain a safe working environment for students. The daily management of the livestock educational laboratories requires the attention of a full time technician. Educational opportunities for students will be vastly improved, and enhanced by the ability current instructors being able concentrate on the laboratory being perform, as well as work closely with the technician. The animal science technician would be responsible for maintaining, setting up and assisting in all laboratory practices including facility maintenance and animal management.

Animal Science data indicates that FTES (12-13 {50}) and E-WSCH (12-13 {1,485}), which is a decrease in 2012-2013 from 2010-2011. This could be due to not having a full-time animal science instructor. Additionally, the Total FTE is up in 2012-2013 (4.4) from 2011-2012. In regards to efficiency (12-13 {376}), it is at its lowest level for the entire data period. The fill rate (12-13 {86%}) and success rate (12 -13 (75%}) is at it’s lowest during this period, but could be due to not having a full-time animal science instructor.

With the additional of a new animal science instructor, the animal science classes are filling as well as the equine classes. The animal science program is the largest program (FTES) within the Division of Agriculture with 50 for 2012-2013. With student safety being a high priority, as well as a high FTES and E-WSCH an animal science technician is necessary to keep improving and growing the program.

Priority: High
Safety Issue: Yes
External Mandate: No

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<td>New full time classified technician for all animal science units.</td>
<td>Funding is required for this position which has been requested for multiple years. In Fall of 2012 funding was included for this position then later was removed.</td>
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