

Project Title: CA Community College Program Expansion: CA Secure Food Supply (SFS) Enhanced Biosecurity Plans

<p>Project Profile</p> <p>Cooperator: University of California (Davis) Project ID: Agreement ID: FAIN: AP22VSSP0000C025 Award Amount: \$ 502,156 Agreement Period: 4/1/2022 – 3/31/2024 Project PI POC: Bennie Irve Osburn Financial POC: Bennie Irve Osburn VS Program Manager:</p>	<p>Project Summary</p> <p>The WIFSS team at UC Davis will work collaboratively with two Hispanic serving institutions (HIS) to develop teaching materials and on-farm, experiential learning activities on enhanced biosecurity practices that will be integrated into existing community college certificate and degree programs. The community colleges that will be participating in the project are San Joaquin Delta College (SJDC) and Woodland Community College (WCC). The content of the newly developed community college curriculum will be derived from educational materials already developed by WIFSS and CDFA to assist farmers in the development of enhanced biosecurity plans that comply with the California Secure Food Supply program; a project funded by a 2019 USDA NADPRP grant. The newly proposed project will utilize the deliverables from the 2019 project and extend their impact. The new curriculum will give current college students in-demand job skills of writing enhance biosecurity plans and consulting on biosecurity for animal agriculture farms. Faculty from each college, along with other community college stakeholders, will help WIFSS staff adapt the current materials for use in existing college classes. This team will also interface with CDFA and the CA dairy industry to ensure that the skills taught will benefit CDFA and dairy farmers, and contribute to workforce development. College students who complete the new curriculum will complete on-farm experiential learning events that provide hands-on experiences including setting up and practicing essential biosecurity activities on an actual working dairy farm, and tours of poultry farms as a demonstration of existing enhanced biosecurity.</p>	<p>Report Date 01/01/2023 – 03/31/2023</p> <p>Completion Score (Project is active)</p> <p>Budget Status XX.X% Spent</p>
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Project Update

Objectives	Completion Score (0-10)	Major Project Milestone Achievements
<p>1. Create one (1) enhanced biosecurity curriculum framework that will articulate with existing community college programs at both Woodland and SJDC by the end of month 5 (July 31, 2022).</p>	<p>10 (Project completed)</p>	<p>See Activities Completed This Quarter for further details.</p> <p>Objective 1 Create one (1) enhanced biosecurity curriculum framework that will articulate with existing community college programs at both Woodland and SJDC by the end of month 5 (July 31, 2022).</p> <ul style="list-style-type: none"> This objective was completed in Q2. The framework can be viewed by following this link: https://ucdavis.box.com/s/r0g33ld8hecpnxik5vmnbjgke1uddigo <p>Objective 2 Synthesize fifteen (15) new online learning modules, learning activities, and/or video-based teaching aids on enhanced biosecurity theory and practice on-farms by the end of month 9 (December 31, 2022).</p> <ul style="list-style-type: none"> 2.2: Team members have completed a total of 22 teaching components. For a breakdown of the module components that have been completed to date, please view the attached Google sheet: https://ucdavis.box.com/s/xun6nlkdg2kd7pl1yljzqc7lzc8oc93q 2.3 – 2.8: The curriculum development steps outlined here are being followed as each module/learning activity is being developed. 2.9: The presentation of the project was completed by Brandi Asmus and Candice Stafford-Banks at the mid-winter meeting of the California Agriculture Teachers Association (CATA). 2.9: Our team had planned to have the conference attendees review and give feedback on the materials at this event, but we have decided to proceed differently. The newly developed materials will be used by our project instructors in their classes in the Spring 2023 semester, and we will adjust the materials as needed based on how the students interact with the lessons and learning activities. Once the materials have been used with students, they will be made available through Canvas LMS to other CA community college instructors, and through another shared database for college instructors outside of California who may not have access to Canvas.
<p>2. Synthesize fifteen (15) new online learning modules, learning activities, and/or video-based teaching aides on enhanced biosecurity theory and practice on-farms by the end of month 9 (December 31, 2022).</p>	<p>8 (Project is active)</p>	

<p>3. Train at least sixty (60) college students on enhanced biosecurity so that they can demonstrate knowledge and skills by passing formative assessments with a score greater than or equal to 70%, and complete on-farm enhanced biosecurity activities scored by SMEs using a rubric. All student training and assessment will be completed by the end of month 21 (December 31, 2023)</p>	<p>8 (Project is active)</p>	<p><u>Objective 3</u> Train at least sixty (60) college students on enhanced biosecurity so that they can demonstrate knowledge and skills by passing formative assessments with a score greater than or equal to 70%, and complete on-farm enhanced biosecurity activities scored by SMEs using a rubric. All student training and assessment will be completed by the end of month 21 (December 31, 2023)</p> <ul style="list-style-type: none"> • The community college faculty are implementing the new course materials this semester (Spring 2023). The semester will conclude in May 2023. Student assessment and course evaluation data will be available for the next quarterly report. Thus far, the content and learning activities are well-received. • Number of students at Woodland College: 45 • Number of students at San Joaquin Delta College: 90
<p>4. Publish one (1) article on the development of the curriculum and the delivery of the new course materials and experiential learning activities.</p>	<p>1 (Project is active)</p>	<p><u>Objective 4</u> Publish one (1) article on the development of the curriculum and the delivery of the new course materials and experiential learning activities.</p> <ul style="list-style-type: none"> • Discussions with Dr. Osburn about the article have begun; an outline will be generated in Q3 or Q4 • The article will be written for an educational journal

<p>Next Steps</p> <ul style="list-style-type: none"> - (new) Prepare presentation for the California Agriculture Teachers Association (CATA) summer conference in June 2023 - (new) Purchase biosecurity supplies that will be used for field experience activity and at the CATA summer conference - (new) Add the new biosecurity course to the Canvas Commons area of the LMS so that it will be accessible to all CA college faculty this summer - (new) Attend the CATA conference in San Luis Obispo, CA in June and present our project - (carry over from Q4) Teach the newly developed modules - (carry over from Q4) Finalize the development of additional course materials that we've decided to add to the list of deliverables for this project. - (carry over from Q3) Complete the design of on-farm experiential learning activity - (carry over from Q4) Finalize the changes to the Canvas course

Activities Completed This Quarter

List activities completed in the last quarter. These should align with items listed in the project Work Plan under the plan's action section.

Major Project Milestone Achievements

Objective 1 Create one (1) enhanced biosecurity curriculum framework that will articulate with existing community college programs at both Woodland and SJDC by the end of month 5 (July 31, 2022).

- Milestones 1.1, 1.2, 1.3, and 1.4 were completed through the collaboration between UC Davis staff and community college (CC) faculty. The curriculum framework is available for review and was submitted along with this report.

Objective 2

- Project landing page created that catalogs the two projects that WIFSS has been working on for USDA NADPRP program since 2020: <http://www.wifss.ucdavis.edu/nadprp-landing/>
 - Current project page: <https://www.wifss.ucdavis.edu/nadprp-22-24/>
- Educational materials completed in Q1 of 2023 include:
 - For a detailed breakdown of the modules and materials completed, or being completed, please see the attached Google sheet: <https://ucdavis.box.com/s/xun6nlkdg2kd7pl1yljzqc7lzc8oc93q>

Objective 3

- Milestones 3.3 and 3.4 are currently being worked on as the new course materials are being taught for the first time at both Woodland College and San Joaquin Delta college. At this point, we have already exceeded the target number of students taught using the newly developed materials. We plan to continue to implement the use of these materials and far surpass our original goal stated in the grant proposal.
 - Woodland College: 22 students in AG 40 – Animal Health and Sanitation have had access to the Intro to Biosecurity, Wildlife/Birds/Rodents, and Anatomy of a Disease Outbreak modules; 23 students in AG 45L – Principles of Animal Science have had access to the Intro to Biosecurity module; the preliminary results of the teaching show an increase in understanding about on-farm biosecurity and the importance of its use on farms to prevent introduction and spread of FAD.
 - Delta College: 90 students in AH SC 10 – Principles of Animal Science have had access to the Intro to Biosecurity Module. Again, preliminary results for this group of students looks very positive, as well.
 - Between the two colleges, 135 students have interacted with the Intro to Biosecurity module, and 22 students have interacted with Wildlife/Birds/Rodents and the Anatomy of a Disease Outbreak modules.

Significant Changes from the Work Plan

Describe major deviations from the original project work plan. Significant changes in the project objectives, sub-objectives, deliverables, and outcomes must be approved by the Program Manager.

- **Objective 2:** We have exceeded our original goal of creating at least 15 teaching/learning aids for college instructors to use in teaching about on-farm biosecurity (both daily and enhanced). We plan to continue the development process for the remainder of the grant period. After attending an FBI-sponsored training course, our project team has more up-to-date information that can be developed into presentations and learning activities that could be helpful to instructors at the community college and high school levels.
- **Objective 2:** Our San Joaquin Delta College instructor will be transitioning into a new teaching position as a high school ag science teacher this fall. This presents us with a new opportunity to reach into the high school programs and share this content with other teachers. We will work with the high school teacher(s) to customize materials for them to use that articulates with the Next Generation Science Standards.
- **Objective 3:** We have further modified our field experience development plan due to the fact that we have not been able to successfully find a local dairy that's able to accommodate our group yet. We think that we will be able to find a location this summer in Tulare, CA, and plan to create a "virtual field trip" using video footage, photographs, and descriptions of the farm. This type of activity is helpful for instructors who are unable to take a group of students on an actual field trip. Our project team will visit the farm and layout the learning activity and produce the multimedia resources that will be needed. If time permits, we may invite a cohort of instructors from other colleges, high school agriculture science programs, and the tribal college to join us for an in-person visit back to the farm location to complete the learning activity. This will serve as a professional development opportunity for the invited instructors, and will be helpful for those who want to include this type of experiential, problem-based learning activity in their current courses. We do plan to take a group of students from Woodland College on a farm field experience at the end of the fall 2023 semester.

Success Stories

Please share any unique event, outcomes, or evidence of positive change related to the project that provides a narrative for project success. This includes any story related to the project that paints a picture of a situation, provides background information, or shares activities associated with the project that do not qualify for reporting elsewhere in the report.

- (2023 Q1) – Brandi Asmus and Jessica Cardoso have both implemented the modules this semester. The most exciting preliminary results are that the students surveyed before any instruction showed very little knowledge or awareness of biosecurity in general, or biosecurity as it applies to farms that house agricultural animals. After completing the Introduction to Biosecurity module, that knowledge and awareness increased significantly. When asked to self-evaluate their own learning on the topic, most students claim to have a significant increase in knowledge and understanding about biosecurity and its critical importance in agriculture, food security, and animal care. Data need to be collected and analyzed to show the actual change in learning, but preliminary, qualitative results look positive.
- (2023 Q1) – Dr. Michael Payne hosted the delivery of the FBI Animal Plant Health Joint Criminal Epidemiological Investigations Course in Stockton, CA in April 2023. Dr. Bennie Osburn and Heather Johnson were invited to attend and participate in the learning activities. At this course, we learned about the most up-to-date information on agroterrorism, agricultural crime, and how incidents of animal and plant disease outbreaks are investigated. There were multiple presentations on biosecurity, as well. We plan to use what we learned to further

develop our course materials. In speaking with the course instructors at the event, we learned that infusing information on biosecurity, agroterrorism, and agricultural crime into college and high programs is helpful to their mission, as well. Raising awareness about these critical topics will help ensure a better prepared workforce and more fortified food system in the future. Identifying vulnerabilities and risks is a crucial first step in protecting agriculture and the food supply in the U.S. We were pleased to learn that our work is in alignment with the objectives of the FBI and USDA.

- (From Q4 report) – In the 4th quarter of 2022 our team was successful in putting together materials for our course and meeting the minimum requirement outlined in the grant proposal. We also successfully framed out the Canvas LMS site that will be used to house the course materials when all is complete. We are pleased that we've been able to outline additional teaching materials and learning activities that will be built in addition to what we committed to build in the proposal. This will result in a much more complete and robust curriculum that will be useful in teaching about biosecurity and enhanced biosecurity on farms where poultry and livestock are raised. We feel that the course materials will be useful to other faculty at other colleges in California and in other states. We look forward to promoting the availability of the course materials and have created a project landing page with a form that people can complete to be added to our mailing/distribution list so that when everything is ready and available, they will be notified.
- (From Q4 report) – Attending the CATA midwinter conference was a great opportunity for networking, sharing our project report, and learning about other projects that are complimentary. We met Dr. Sharon Freeman at Fresno State University who has created an educational program for high school and community college agriculture students using the Agricultural Experience Tracker (AET). This is a tool that many 4-H and agriculture students in high school and college are using to track the educational experiences that they are having that are in addition to their formal, in-class education. We plan to meet with Dr. Freeman in January or February to discuss how we can learn from them about using the AET with our training and experiential learning activities. We believe that this possible partnership with Fresno State will be mutually beneficial to UC Davis, Fresno State, and the community college and high school agriculture programs that will be using our course materials.
- (From Q4 report) – At the CATA midwinter conference we learned that the faculty in CA is looking for hands-on experiential learning activities that they can participate in themselves as a form of continuing education. We plan to open up the on-farm experiential learning activity that we are building to teachers at nearby colleges and high schools in northern CA. In doing this, we will be “training the trainers” who can then take these lesson plans and modify them for their own purposes in their classrooms.
- (From Q3 report) - As was mentioned above, we have the opportunity to work closely with CDFA on the creation of a module that will satisfy part of the curriculum framework while also ensuring that the content being taught in class is the most up-to-date material on the subject of the secure food supply program.
- (From Q2 report) - As we move forward with the creation of the course materials to satisfy the objectives of this project, our team continues to look for opportunities to further develop a complete certificate and/or degree program in on-farm biosecurity that could be delivered through the community college system. The program would be based on needs assessment data and specific needs from the industry following the community colleges well-established system for evaluating community needs. The mission of the community college is to serve the local community first and foremost. We believe in this mission and are looking for opportunities to help develop the agricultural workforce in communities where agriculture is a major industry. We also aim to strengthen the working relationship among institutions of higher learning from the community colleges to the universities to state and county agricultural departments. Funding for

workforce development projects will likely become available during the course of this project and we plan to gather information from the industry and college administration to help us better understand the needs that a certificate and/or degree program in on-farm biosecurity could meet.