Developing Tomorrow’s Meat and Food Scientist: A Program to Recruit and Retain Underrepresented Students

Award Number: 2013-38422-20950
Award Amount: $270,000

Project Summary

The purpose of this project is to address the USDA identified problem of underrepresentation of Hispanics in food and agriculture careers through outreach, recruitment, retention, and graduate and undergraduate student placement of students in these areas. The project uses videos, informational pamphlets, in-person demonstrations, school and community visits, and experiential learning programs to recruit and retain high school students and undergraduates.

Project audience includes 140 schools (~2,800 students) with large underrepresented student populations and ≥20 undergraduate students. A video highlighting careers in agricultural science will be developed and distributed to schools, and an ASU representative will visit 35 of these schools. Visits will include information, AgForLife® model and food science/safety demonstrations. Articulations will be completed with three junior colleges, and we aim to recruit and transfer for these students. Fifteen high school students will participate in “Leaders in Food Technology” (LIFT), an experiential learning program. LIFT students will engage in hands-on training and summer research. The project addresses low retention rates of first generation students through mentorship. Undergraduates majoring in Food and Animal Science and Marketing (FASM) will also engage in experiential learning. Seventy-five percent of FASM students will obtain certifications (HACCP and ServSafe). One-third of FASM students will participate in LIFT, an experiential learning program. The LIFT and FASM cohorts will train on industry-grade Food Microbiology equipment. The primary impacts of the project are increased enrollment and graduation of underrepresented students in post-secondary food and agricultural science programs, leading to greater representation in government and industry food and agricultural fields.

Activities

Outreach/Recruitment
Multicultural Center and AgForLife® consultant- conduct coordinated faculty, staff and outreach coordinator workshops
-Train Faculty, outreach coordinators and ASU recruiters (30 faculty, 2 outreach coordinators, 5 recruiters)
Create and distribute Meat and Food Science Careers recruitment video, pamphlets and website (English and Spanish)
-Reach 2,800 students and 280 counselors and teachers and receive surveys from 35 schools
Conduct school and counselor outreach visits
-Engage and inform 700 students and 70 counselors and teachers
Conduct informational community visits
-Develop relationships with 18 communities in 4 regions of the state
Create and implement “Leaders in Food Technology” Program (LIFT) for students and parents
-Introduce and educate 15 high school students in the LIFT (Leaders in Food Technology) program of summer research and awareness
Develop and complete 3 articulation agreements with 2-year colleges
-Provide departmental information and engage 80 students currently attending 2 year colleges.

Retention
Multicultural Center/consultant-coordinated faculty and graduate mentor training
-All faculty and graduate students trained in mentorship best practices
Create LAMBs (Leaders in Agriculture Mentoring Beginnings) mentor program and conduct meetings
-Engage 15 undergraduates in the LAMBs mentor program and coordinate 24 program meetings
(8/academic year)
Multicultural Center RAMS (Raising And Meeting Standards) mentoring program
-Minimum of 75 % - 1 generation students engaged in RAMS

Experiential Learning
Laboratory modernization and enhancement
-facilitate proficiency in scientific techniques
-Minimum of 85% of students are proficient in scientific techniques using modernized industry equipment
Certification programs
-Minimum of 75% of students certified in national Food Safety certifications
Undergraduate research & collaborative internships
-At least 33% of FASM cohort participate in collaborative internships and the remaining 66% will conduct an undergraduate research project (years 2 & 3)

USDA – NIFA Priority Area’s Addressed

Project Objectives

Objective 1: Increase the number of Hispanic and other minority ASU students seeking degrees in meat and food science fields (FASM majors and food science minors) to 30% (from a baseline of 25.8%), thereby adding at least 15 new students over the three-year grant period

Objective 2: Retain at least 65% of all students who pursue a degree in Food Animal Science and Marketing (FASM) through mentorship programs

Objective 3: Increase the skill level of students who will seek employment in agricultural science fields through experiential learning projects and curriculum enhancement as evidenced by performance on classroom, standardized, and industry assessments.

Partner Organizations and USDA Collaboration

Partner Organizations
1. Lone Star Beef (Internship Program)
2. Odessa College (Internship Program)
3. Howard College (Internship Program)
4. HEB (Internship Program)
5. PAK Marketing (Meat Broker) 6. Cargill Meat Solutions (Internship Program)
7. Tyson (Internship Program)
8. Seaboard Farms (Internship Program)

USDA Collaboration
1. USDA-FSIS
2. USDA-AMS

Beneficiaries

Number of Students and Other Beneficiaries Impacted by Project

Evaluation Plan

We will conduct regular internal project evaluations and contract with the Erickson Consulting Services LLC (ECS) to obtain an independent project evaluation. Internal evaluation includes regular review of project activities and objectives during monthly meetings to confirm the project is on schedule, meeting all milestones, collecting and disseminating institutional data on the numbers/demographics of students (recruited, retained and graduated) and number entering graduate programs. The ECS external evaluators will advise the PIs on internal data collection, assist with development of pre/post surveys for teachers and LIFT program participants, conduct an annual site visit to ascertain program impacts as well as opportunities for improvement based on data collected, interview key personnel and focus groups with student participants, and assess progress toward meeting program goals. Additional evaluation will occur through integration of the USDA-Meta Evaluation with our internal evaluation.

Expected Outcomes

1. Increase the number of qualified graduates each year -
A. Prepared to create a safe food supply
B. Able to develop and conduct research addressing food safety and product creation

2. Create more competitive applicants for graduate study or employment

3. Increased collaboration between ASU and partners

4. Increase opportunities in internships and careers

5. Improved pathways for transfer students in the meat and food sciences