

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

Award Number: 2013-38422-20950

Award Amount: \$270,000

This project is supported by a Hispanic Serving Institution's Competitive Grant no. 2013-38422-20950 from the USDA National Institute of Food and Agriculture.

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, graduation and graduate school/career 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 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 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 internships, the remaining 2/3 will complete undergraduate research. 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 agreements

Develop and complete 3 articulation awareness with 2-year colleges

-Provide departmental information and engage 60 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 % - 1st 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

Priority Need Area: Food Safety and Global Food Security

Educational Strategies: Primary Focus – Recruitment and Retention
Secondary Focus – Student Experiential Learning

Primary Discipline/Subject Matter: Animal Science, Food Science and Technology and Manufacturing (including Food Safety), and Agribusiness Management and Marketing



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
3. Howard College
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

Outreach Events	# Institutions Involved	Approx. # Impacted
ASU Video	140	2,800
On-site Visit	35	1,200
LIFT Program	--	15
FASM Program	--	15
Mentoring - Mentors	--	4
Mentoring - Mentees	--	≥ 15
Community Visits	18	~180
High School Counselors	35	35
2-Year Colleges	3	30

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

