USDA/CSREES
Multi Cultural Alliances Higher Education Grant

UBET ⟷ eUBET

expanding Undergraduate Bioscience Engagement Track (eUBET)
Award # 2008-02111
Amount: $290,000

A High School <-> Community College <-> University or Research Lab Pipeline

eUBET Partners

- South Mountain Community College (SMCC), an inner urban HSI and one of ten Maricopa Community College District colleges in Phoenix, Arizona. 30 years old;;
- Carl Hayden Community High School (CHCHS), an inner urban Public High School in the Phoenix Union High School District, PUHSD), 75 years old ;
- Corona Del Sol High School (CDSHS), a Suburban Public High School in Tempe Union High School District, (TUHSD), 25 years old;
- Marcos de Niza High School (MdNHS), an inner urban public high school in Tempe Union High School District, (TUHSD), 37 years old;
- Mesa Bioscience Academy; an inner urban school within a school that provides academics combined with a career focus, a team of teachers & bioscience industry involvement (Mesa Public School\ District), 5 years old;
- Phoenix Bioscience High School. A small four-year school providing a unique science education, with collaboration among the academic and scientific communities in downtown Phoenix, 2 years old;
- Tempe High School, an inner urban High School in the Tempe Union High School District, TUHSD), 100 years old;
- USDA/ARS Arid Land Research Laboratory, Maricopa, Arizona; 2 years old.

USDA Relevant Priority Areas

- Strengthen Institutional Educational Capacity in response to Arizona' emerging bioscience Industry;
- Attract and Support undergraduate students from under-represented groups and prepare them for bioscience careers or advanced studies.

eUBET Goal

- The primary goal of eUBET is to increase the number of students, especially underrepresented minority students, pursuing bioscience careers and advanced studies in Arizona's rapidly-growing biotechnology industry.

Activities

- Provide laboratory upgrades with Bioscience Equipment for 3 Partner High Schools;
- Conduct College Bioscience Courses to train and Certify High School Science Faculty to teach college biosciences courses;
- Employ a Science Lab Technician and two student science lab assistants to support partner High School bioscience classes;
- Enroll at least 800 high school students in college dual enrollment bioscience courses at partner High Schools during the three year grant period;
- Promote scientific reasoning, innovation, and scientific rigor by engaging students in research projects and participating in science competitions;
- Provide high school students bioscience coursework and laboratory training typically reserved for upper-division or graduate level college students so they can become competent and confident in Arizona's bioscience workforce or in a university pursuing advanced bioscience studies.
- Promote experiential learning and mentoring by enrolling students for internships at USDA/ARS in Maricopa;
- Select one eUBET bioscience student to receive a full university scholarship.

Beneficiaries

- Three high school districts serving over 110,000 students (PUHSD, TUHSD, and Mesa Public Schools districts) plus Arizona Agribusiness and Equine Center Charter school students;
- Twelve high school science faculty who receive tuition waivers for bioscience courses and certification to teach college-level bioscience courses;
- Over 800 students (including at least 300 minority students) who enroll and successfully complete at least one college-level bioscience course;
- eUBET students, Faculty, and the USDA/ARS Arid Climate Lab in Maricopa, AZ where student and faculty participate in an intern program;
- Arizona's bioscience industries, universities, and communities with the infusion of over 100 under-represented minority graduates pursuing bioscience careers.

Evaluation

- Student formative and summative evaluations for all UBET bioscience courses;
- SMCC Chair evaluations of all eUBET bioscience Faculty;
- USDA/ARS evaluation of faculty and student interns.

Impact

- eUBET expands upon the UBET Grant pilot for the PUHSD and TUHSD in Arizona. Both districts added another high school and the grant added another school district Mesa Public Schools) resulting in the doubling (400 to 800) of the number of high school students receiving bioscience dual enrollment credits). All of the new partner high schools are Minority Swerving and Hispanic Serving Institutions.
- eUBET doubles the total number of students enrolling in a bioscience classes in all ten Maricopa Community Colleges (MCCD Grants report, February 2008).

Nuevos Cursos en BIOTECNOLOGÍA



¿Qué es la Biotecnología?

"Biotecnología abarca un campo amplio de ciencia y tecnología que usa seres vivos para beneficiar a la gente"

"Este campo increíble está produciendo los desarrollos más actuales en investigación médica, agricultura, horticultura, acuicultura, bioinformática, justicia penal, y bioprospección"

¿Qué son ejemplos de Biotecnología?

- Terapia génica para curar enfermedades y trastornos genéticos; Ingeniería de tejidos para reemplazar órganos defectuosos;
- Asistencia médica adaptada según los requisitos del paciente para hacer drogas y vacunas;
- Cultivo de plantas para mejorar su resistencia a insectos y enfermedades;
- Clonación y manipulación de ADN para mejorar la nutrición de cultivos;
- Recuperación biológica para adquirir metales de escombreras de minas;
- Bioremediación para limpiar tierra y agua de contaminación de químicos tóxicos

Por favor, comunícate con: _____ en_____para recibir información sobre cómo inscribirte o para contestar preguntas.

BIO 107: INTRODUCCIÓN a la BIOTECNOLOGÍA



Créditos Académicos:

4.0 créditos académicos (Se pueden transferir a una universidad).

En la clase de BIO 107 vas a:

- Aprender técnicas de ingeniería genética en las clases interactivas del laboratorio;
- Diseñar y concluir proyectos científicos;
- Ser el primero en usar nuevo equipo biotecnológico;
- Prepararte *para cursos avanzados y carreras de biotecnología;*

¿Buscando una carrera…

…dónde puedes combinar tu pasión para ciencia y tu impulso para ayudar a la gente? ¿Quieres trabajar en un campo dinámico que está creciendo con muchas oportunidades de trabajo y una potencial de ingresos excelentes?

Carreras emocionantes en biotecnología

Investigadores en agricultura, biología, genética, y medicina están al frente de descubrimientos nuevos de biotecnología. Están trabajandopara aclarar los códigos genéticos que gobiernan los procesos devarios seres vivos para que puedan entenderlos y modificarlos cuando sea apropiado.