Amarillo College

APPLICATION DUE BY MONDAY, July 1 AT 3:00 p.m.

SUMMER RESEARCH INTERNSHIP
Science, Technology, Engineering & Math (STEM) Majors

2019 Research Topic: Bioremediation: Optimizing the production of algae for use in Bio-fuels utilizing Nutrient Runoff - Consortium vs. Single Strains

Overview: This research project will focus on Environmental Science and how Bioremediation can be used to solve environmental problems. In areas of intensive agricultural production nutrient pollution can be a major concern, excessive nutrients not used in the process are seen as pollutants and can cause environmental damage, this is called Nutrient Runoff. Algae can be used to reduce or eliminate Nitrogen, specifically nitrates, from agricultural Nutrient Runoff. To be effective the bioremediation system needs to be cost effective. Your goal is to construct a bioreactor and research whether a single strain of algae is more efficient than a mix of algae, a consortium, and successfully determine the amount and rates that a bio-fuel could be produced as it relates to the removal of nitrogen in the nutrient runoff.

Parameters Measured/Identified:

- Growth rates of algae (use a hemocytometer to monitor growth rates)
- Determine the rate of Nitrates over time and calculate the velocity
- Determine the quantity of oils capture from the algae produced

APPLICATION GUIDELINES:

- Applicants must have a cumulative grade point average of **at least 2.0**. High school juniors and seniors must have at least a 70 average overall in high school coursework to be eligible for this research internship.
- Please attach your **most recent transcript**, which includes grades through fall 2018, which will be verified to ensure GPA eligibility prior to selection.
- Applicants must be a **declared STEM major** (Biological Sciences, Chemistry, Computer Science, Engineering, Mathematics, and/or Physics) **and be pursuing a college level degree**, or if the applicant is a high school junior or senior, applicant must be planning to pursue a college level STEM degree in college.
- Applicants will be notified in writing if selected to participate in the Summer Research Internship by **Monday, July 15.** If you do not send back the acceptance postcard by the deadline designated on the postcard, you will forfeit the opportunity.
- Please note that **this application must be completed in full, signed, and dated** in order for applicant to be considered for the internship. Only 24 interns will be selected for this prestigious research opportunity. An alternate list will be created in the event of a cancellation.

SUMMER RESEARCH INTERNSHIP REQUIREMENTS:

- Complete the intensive 2019 Bioremediation summer research project. Develop and conduct an investigator-initiated research project, in consultation with the faculty mentor.
- Participate in other research activities at Amarillo College (i.e. attend research seminars, group meetings, etc.)
- Complete an additional research project within the timeframe of the internship.
- Present research results at the Summer Research Internship closing event.

EMAIL, MAIL, or HAND-DELIVER INTERNSHIP FORM AND ATTACHED DOCUMENTATION TO:

EMAIL:
kali.key@actx.edu

BY MAIL:
Amarillo College
Attn: Kali Key
PO Box 447
Amarillo, TX 79178

IN-PERSON:
Kali Key
Warren Hall, Office 101-F
Washington Street Campus

The STEM Summer Research Internship is provided by a Title III Hispanic Serving Institution STEM award.

Please type or print clearly

If Applicable, AC Student ID #: _____

PERSONAL DATA:

Applicant's Name: _____, _____, _____
Last *First* *Middle*

Birth date: _____ /_____ /_____
Month *Date* *Year*

Permanent Address: _____
Number & Street, City, State, Zip Code

Address While In School: _____
Number & Street, City, State, Zip Code

Phone Number: _____

Email Address: _____

Sex: [ ] Female [ ] Male

Marital Status: [ ] Single [ ] Married [ ] Divorced [ ] Widowed

Race/Ethnicity:

[ ] American Indian, non-Hispanic/Latino
[ ] Asian, non-Hispanic/Latino
[ ] Black, non-Hispanic/Latino
[ ] Caucasian, non-Hispanic/Latino
[ ] Hawaii/Pacific Islander, non-Hispanic/Latino
[ ] Other, non-Hispanic/Latino

[ ] American Indian, Hispanic/Latino
[ ] Asian, Hispanic/Latino
[ ] Black, Hispanic/Latino
[ ] Caucasian, Hispanic/ Latino
[ ] Hawaii/Pacific Islander, Hispanic/Latino
[ ] Other, Hispanic/Latino

Employment:

[ ] Work 30 to 40+ hours per week
[ ] Work 20 to 29 hours per week
[ ] Work 10 to 19 hours per week
[ ] Work less than 10 hours per week
[ ] Do not work

Place of Employment: _____

Disabilities: _____
Disclosure not required

EDUCATION:

High School Attending/Attended: _____
Name, City, State

Date of Graduation: _____ **Date Received GED:** _____

Classification:

[ ] High school (incoming) senior [ ] Recent high school graduate [ ] Amarillo College Dual Credit student
[ ] Current Amarillo College student [ ] Re-entering AC [ ] Transfer from another college [ ] No prior college

College(s) Previously Attended: _____
Name, City, State

Honors/Awards: _____

Community Involvement: _____

DECLARED/ANTICIPATED MAJOR:

Please select your current/future field of study:

[ ] Biological Sciences/Biology [ ] Chemistry [ ] Computer Science [ ] Engineering [ ] Mathematics [ ] Physics

CAREER GOALS STATEMENT:

In 250 words or less, please describe your career goals, including educational attainment and career expectations. Please also describe why you selected your specific STEM major. (Can be attached as a separate document.) Letters of recommendation are optional and can be attached as a separate document as well.

CERTIFICATION:

By my signature, I agree that the information contained in this application is true and correct to the best of my knowledge.

_____ _____

Signature **Date**

For Official Use Only

Reviewed by HSI-STEM Committee on _____

Date

Approved/Not Approved by Committee for participation in August 2019 Summer Research Internship subject to student acceptance response received by deadline.

Notification sent to Awardee _____