

Grant Number 989

Project Title Who Did it? Efficiently Reporting Evidence in Forensics

Please select the **MAIN** curriculum area your grant addresses. ScienceDoes your grant have a technology component? (Will you have technology equipment, software, etc. in your budget?)
 No
 Yes

Primary Contact Information

First Name Darren

Email darren.hayes@allenisd.org

Confirm Email darren.hayes@allenisd.org

Last Name Hayes

Phone Number 469-919-3429

Campus Allen High School

Main Subject Science - Secondary

Grade(s) 12

I have co-applicants.

Social Media

Please provide your work-related social media contact information.

Facebook Darren Hayes

Twitter @AHSCSI

Other (please specify) None

Additional Grant Applicants

	First Name	Last Name	Campus	Grade
Tara		Allgood	Allen High School	12

Grant Number 989

Campus/Student Information

Your campus: Allen High School

Will other campus' be involved/impacted by this grant?
 No
 Yes

Your grade(s): 12

Will other grades be
involved/impacted? No
 Yes

Please select all grades that will be
involved/impacted by the grant.

11

Project Purpose

What is the problem, need or opportunity that this grant will address? Describe the impact of this project on your students.
(500 words or less.)

Being able to identify, document and share evidence at a crime scene is crucial to maintain proper protocol when building a profile or case of any person who had been at a crime scene. Identifying characteristics of human hair, animal hair, fiber, soil, grass among other "trace" evidence requires the usage of a compound microscope. Another vital aspect of forensics is to properly follow protocol and thoroughly document the evidence findings. According to TEKS set forth by TEA and followed through district policy; communicate valid conclusions supported by the data through methods such as investigative reports, lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports. Here at Allen High School the forensic student must keep an online website to report and document their findings from team investigations conducted during class. The students classify and visually display the evidence on a google website which is an online, running journal used as a means of documentation for all activities done during the year.

The students face an extremely difficult task in obtaining the microscopic images when they attempt to use the camera on their phone. Attempting to take a picture through the eyepiece of a microscope is hard to do because the camera on the phone is hard line up with the line of sight of the image from the microscope. This is a time consuming process in that only one student at a time can take the picture while others wait. The images may be out of focus, too small to see and cut off thus not providing the best images to export. Another difficulty is that Allen High School Students have different styles of phones that contain different camera abilities and applications. Some of these phones do not allow to export images correctly into the google website that they are using for their journals.

This grant would allow the Forensic team to purchase Moticam (CMOS) cameras that easily fit on the eyepiece and provide a clear enlarged image that will allow multiple students to download images simultaneously on their phone using the free Moticam App. This also allows students to export the images much easier to their journals creating a more accurate visual representation of their evidence.

Project Description

How will the project or program be implemented? Describe activities and tasks.
Who is the target population and in what ways will they benefit? (500 words or less.)

Allen high School Forensics students will be using microscopes for multiple units, thus needing the Moticam cameras as well. The implementation of these cameras will be used for the following topics the AHS students will conduct:

1. compare and contrast the microscopic characteristics of human hair and animal hair, including medulla, pigment distribution, and scales
2. describe and illustrate the different microscopic characteristics used to determine the racial and somatic origin of a human hair sample
3. differentiate between natural and synthetic fibers
4. compare the three major fingerprint patterns of arches, loops, and whorls and their respective sub-classes
5. identify the minutiae of fingerprints, including bifurcations, ending ridges, dots, short ridges, and enclosures
6. identify controlled substances using laboratory procedures such as microchemical tests, microscopy, chromatography, and spectrophotometry.

This program, by providing the needed equipment, will positively affect all 240 forensic students at AHS for more accurate data communication.

Project Summary

Provide a brief summary for use on the Foundation's website and social media. (2-3 brief sentences)

Forensics students will use these high resolution streaming WiFi cameras to view, capture, and edit microscopic images. By creating its own WiFi signal, the camera can connect with the students' Android or iOS device with the free MotiConnect app.

Allen ISD Goals/ TEKS

Which Allen ISD goals/TEKS does this project support? Provide only two or three examples.

(3) The student uses scientific methods and equipment during laboratory and field investigations. The student is expected to:
 (H) communicate valid conclusions supported by the data through methods such as investigative reports, lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.
 (7) The student recognizes the methods to process and analyze trace evidence commonly found in a crime scene.
 (A) demonstrate how to process trace evidence such as glass, paint, fibers, hair, soil, grass, and blood collected in a simulated crime scene;
 (E) describe the instrumental analysis of trace evidence such as microscopy and spectrometry;
 (F) compare and contrast the microscopic characteristics of human hair and animal hair, including medulla, pigment distribution, and scales;
 (G) describe and illustrate the different microscopic characteristics used to determine the racial and somatic origin of a human hair sample;
 (H) differentiate between natural and synthetic fibers.
 (8) The student analyzes impression evidence in forensic science. The student is expected to:
 (A) compare the three major fingerprint patterns of arches, loops, and whorls and their respective sub-classes;
 (B) identify the minutiae of fingerprints, including bifurcations, ending ridges, dots, short ridges, and enclosures

Measurement

What specific measurements will be used to evaluate the effectiveness of the project? (500 words or less)

The effectiveness of this grant will be measured by improvement of students understanding of the different tissue samples and reduction of time spent capturing digital images. In Forensics, students assessments are determined by rubric based grading and accuracy of documentation on the website. With the introduction of these cameras, the images students use to document will be improved, therefore their achievement on these assessment will likely improve. In addition, with the introduction of these cameras, the time students take to capture the images should decrease allowing more time for students to analyze these images to understand how each differ. Currently it takes students about 3 days to view and capture images to prepare for the journaling and "chain of custody protocol" heavily relied on in Forensics. Hopefully, with this grant the students will only need 1 day to view and capture images. The same can be said for the students to be able to differentiate different aspects of hair, soil, and other microscopic features. These cameras will speed those processes up and allow the students more time work on and cover additional information in each unit.

Teaching Methods

What teaching methods will be used to implement this project? (500 words or less.)

Forensics uses an asynchronous mastery learning strategy in which students are expected to demonstrate learning before moving on to the next learning objective. Determining different microscopic characteristics of collected data seems to be the most challenging aspect. However the learning in this unit is the foundation for all subsequent units since microscopy is a major use of evidence analysis. Students are introduced to the main characteristics of the evidence to be analyzed in each unit, then in-class, student explore these differences by examine them under the microscope. The student must then demonstrate their understanding of the differences of the samples by passing a formative assessment which we call a mastery check. Students are not allowed to proceed on to the summative assessment until they prove to themselves and the teacher they are able to be successful on the mastery check. This results in an asynchronous classroom in which students are learning at their own pace, however students avoid development of learning gaps because they are not allowed to move on until the prove mastery.

Timeline

What is the project timeline and the date of implementation?

Implementation would begin immediately to begin working on trace evidence analysis. This school year videos will be made by teacher using the cameras to do pre-lab instructions for next school years labs.

Curriculum/System Support

Explain how this idea or project enhances/supports Allen ISD curriculum or existing systems.

These cameras will support the district curriculum goals to incorporate the process standards throughout the school year in forensics. This will also allow the students to have a more varied lab experience while maintaining at least 80% of instruction time as laboratory investigations in class. We are asking for 10 cameras to be shared between two teachers. This amount of cameras will support lab groups of five to six students. Keeping groups to this size will allow for more student engagement, assign specific positions for each forensic team and better learning.

Budget Details ** All awarded funds will be available by September of the next school year.

Budget Item	Item Type	Unit Cost	Quantity	Total Cost
National Optical Moticam X WiFi-Enabled Microscope Camera	Technology	330.3	10	3303.0

BUDGET TOTAL 3,303

Are there any additional funds available for this grant? Campus or District Funds? PTA funds? Let us know if you have or will be seeking funds from other sources to help with this project.

Additional funds? No
 Yes

Principal Approval Required

Please provide the Name and Email of your PRINCIPAL. (Not your name)

First Name	Last Name	Email Address <small>(Completed)</small>
Jennifer	Fuller	jennifer.fuller@allenisd.org

Applicant Signature

By entering my name below I signify that I understand that if I move within the District and have written the grant myself, I may take the grant with me to my school (as long as it is appropriate for my classes). If I have written the grant as part of a team, I will leave the grant behind with the team. If I leave AISD, I will leave the grant with the school for which I wrote the grant. As a condition of this grant, I will complete an evaluation form provided by the Foundation.

Signature Darren Hayes

Date 01/11/2019

I certify that this would be a good use of funds for our school and this grant supports the district goals and/or our campus improvement plans. **Do NOT include any identifiers, such as: campus name, your name, teachers name or mascot **

No actions possible.

Comments

Approved. Darren is passionate about his subject. He presents at conferences and he is always looking for ways to enhance learning.

State Change History

State Change darren.hayes@allenisd.org
01/09/2019 14:14:19
Submitted

State Change *****
01/09/2019 19:36:25
Accepted

Grant Status

Grant Awarded Yes
 No

Award Amount 3303