

**Example ACS-Hach High School Chemistry Grant Proposal**  
**Category: Professional Development**

**Student Impact**

120

**Collaboration**

No

**Proposal Summary & Goals**

I will use the grant funds to attend quality professional development that highlights labs of proven effectiveness in increasing student comprehension of chemistry. I will purchase supplies to implement those labs and to train other teachers in the state. The first goal of my proposal is to attend the ChemEd2011 conference and focus on sessions that demonstrate inexpensive, inquiry-based labs. The second goal is to purchase supplies to incorporate those proven successful labs into the curriculum and more completely address the student learning objectives of the Arkansas Chemistry Frameworks. The third goal is to present the information to Arkansas science teachers at the annual Arkansas Curriculum Conference in November 2011.

**Description**

I teach in a small rural school and make up half of the high school science department. As such, I teach Physics, Chemistry, Physical Science, AP Environmental, and Biology. I hold a BS in biology and while I'm comfortable teaching most of the content in all courses, I lack ideas to implement effective inquiry-based labs in chemistry. I experienced the same problem with physics until I attended invaluable physics professional development provided on the University of Arkansas campus. For the past six summers, I have traveled across the state to attend a week of physics workshops. I have implemented many of the activities into my curriculum and transformed physics class and the physics semester of physical science into hands-on, inquiry lessons that address the state frameworks. I have also presented many sessions at state wide conferences to share the information with other teachers.

Unfortunately, high school chemistry professional development is practically nonexistent in Arkansas. In trying to find opportunities to improve my delivery of chemistry concepts, I became aware of the ChemEd conference. I understand it is one of the best chemistry professional development opportunities available. I feel assured that I will gain ideas for implementing effective, inquiry-based labs and be exposed to updated content information at the ChemEd2011 conference. This will enable me to incorporate "field tested" labs into my curriculum which will increase student interest and build better foundations in basic chemistry concepts. This should assist students in transitioning to the depth and pace of college level courses. I will also present sessions at the Arkansas Curriculum Conference to share the information with fellow teachers and attempt to fill a void in the area of high school chemistry sessions.

In order to get the most educational "bang for my buck", I have not listed specific supplies and kits in the budget of this proposal. While I understand this may hurt my chances for funding, I want to be as efficient and as far reaching as possible in my purchases. I want to build on the knowledge gained in July at the ChemEd2011 conference and invest in supplies specifically needed for those labs rather than choose items from a catalogue that look interesting and meaningful only to find them overpriced for what you get or worse ineffectual at increasing knowledge and comprehension.

Because a large component of my proposal is for education, it will be self-sustaining for the remainder of my teaching career. Through the ideas gained, I will be able to impact the learning of students every year following my attendance. My district has always funded requests for supplies when tied to a worthwhile activity. If I receive as much quality information from the ChemEd conference as I've received from the physics workshops, the district is much more likely to fund attendance in future years and to provide funds to replenish consumables and kits.

### **Outcomes**

My project will improve student learning in chemistry by allowing me to add to my text's cookbook labs. Since I will be focusing on inquiry labs, I will enable students to gain a deeper understanding of concepts and to take greater ownership in the activities. As understanding increases so will the confidence of the students. This increased confidence will lead more students to enroll in the AP Environmental course which is known by the students to have a large chemistry component. The improved attitude of the students will be communicated to fellow students in lower grades and encourage more students to enroll in chemistry in subsequent years.

Because I plan to present sessions at multiple state wide conferences, I hope to assist other educators in improving their delivery of chemistry and thus enable them to improve student learning in their classes as well. With the economic downturn that is forcing school district across the nation to tighten their belts, I don't foresee a large group of Arkansas educators being able to attend a conference in Michigan. I currently serve on the board for the Arkansas Science Teachers Association and I look on the opportunity to share information from ChemEd2011 as a privilege to provide a window to this national conference for our state and, in so doing, exponentially increase the number of students involved in inquiry-based labs.

### **Evaluation**

I will consider my goals met if I attend the ChemEd2011 conference and come away with multiple ideas for new labs that are inquiry based. I will consider the second goal met if I receive the lab supplies and kits in a timely manner so they can be utilized throughout the entire school year. I will further consider the second goal met if students' understanding and confidence in the material increases as compared against the average understanding of past students. I will also survey students' thoughts and ideas to get their impressions of the helpfulness of the labs. I will take this into consideration in choosing what to present in conference sessions and use student responses to assist in differentiating instruction for different learning styles and different knowledge levels. The third goal will be met as I use the information from the conference combined with student reactions and results to prepare and present information to colleagues across the state.

### **Grant Amount**

\$1,410.00

### **Budget**

\$280 - Conference registration

\$120 - Lodging on campus

\$140 - Gas (1200 miles roundtrip @ 30 mi/gal = 40 gal @ \$3.50/gal)

\$120 - Food (4 days @ \$30/day)

\$750 - Consumable lab supplies and/or demo kits for students and ACC attendees

**\$1410 – Total**