

Section 2.5

Sample Letter of Intent

July 10, 1995

Robert L. Lichter
Executive Director
The Camille and Henry Dreyfus Foundation, Inc.
555 Madison Avenue
New York, NY 10022-3301

Dear Director Lichter:

The California State University - Chico Science Education Laboratory (College of Natural Sciences) and the Department of Professional Studies in Education (Center for Bilingual/Multicultural Studies) are interested in submitting a proposal to your **Special Grant Program in the Chemical Sciences**.

A major priority of both the California State University System and the California State University - Chico campus is to establish a strong leadership and support role in K-12 education. Last fall we were able to dedicate a University laboratory on the second floor of the Physical Sciences building to K-12 hands-on science activities. This laboratory holds 25-30 students and was used last year in a small-scale pilot program of twenty one-hour chemistry activities for grades 3-6 including such activities as "The Chemical Mystery Spill," "Chemical Magic and Slime," "Exciting Chemical Reactions," and "Purple Cabbage and Household Chemicals." We have had very positive feed-back from teachers who say it fits well into their curriculum as well as provides for an exciting field trip.

In order to expand the audience and impact teachers-in-training as well as single classrooms in our service area, we propose here an interdepartmental program which will use advanced chemistry undergraduates to train student teachers in our Multiple Subjects Credential 5th Year Program in hands-on science activities using the CHEM kit (Chemistry, Health, Environment and ME) developed by the Lawrence Hall of Science, University of California, Berkeley.

Rationale and Statement of Need:

The rationale and need for the proposed curriculum addresses a vital challenge facing California's schools. "All children in California are growing up in a world characterized by diversity. Today nearly one-third of the total school population of California is composed of students with limited proficiency in English and more than half are culturally and ethnically diverse." (California State Department of Education, 1994) This diversity means that the classroom has changed and that teachers-in-training and teachers in the field must be able to access the academic science curriculum to all children.

In response to this phenomena, the proposed grant brings together Institute of Higher Education (IHE) faculty in the College of Natural Science and the College of Communication and Education to incorporate key aspects of teaching methodology with a hands-on science curriculum that will be accessible to all children. Student teachers will learn strategies for specially designed science instruction and K-6 students will have access to an enriched curriculum in science education. Therefore, through an integrated

interdepartmental approach to teacher training, this proposal will introduce core science to all children including those whose language and culture is other than English.

The specific objectives are:

1. To strengthen the science understandings of 3-6 grade students with stimulating hands-on exercises in an exciting atmosphere.
2. To train Multiple Subject Credential students in presentation techniques for chemical experimentation.
3. To promote communication and collaboration among K-6 teachers in our service area, credential students, science educators, science faculty and science undergraduates.

The proposed activities schedule is outlined below:

HANDS-ON SCIENCE ACTIVITY SCHEDULE

FALL SEMESTER

Training of Undergraduates Chemistry Students

Chemistry students (volunteers, independent study or teaching assistants) will be selected and trained using the CHEM Kit (Chemistry, Health, Environment and Me - Lawrence Hall of Science, UC Berkeley). This kit is a box of self-contained supplies and teacher's manual for 10 hands-on experiments in chemistry and is designed for 4-6th grades. The module used in the Chemistry Department in the Spring of 1995 was "The Mystery Spill," which emphasizes the principles of chemical testing for hazardous materials that may be spilled in our environment through the use of common kitchen substances such as sugar, flour and baking soda. We have had very positive feedback on this lab from teachers who say it fits well into their curriculum as well as provides for an exciting field trip. An additional experiment may be "Carbon Dioxide and Me" which illustrates the properties of the gas, carbon dioxide, and its role in global warming trends. Three of the four undergraduates who led these activities last spring have indicated their interest in continuing next year.

Selection of credential candidates for the Hands-On Science Activity:

The fall semester will be used to select 6-8 candidates for these activities. The students need to be interested in teaching in the 4-6th grades (possibly 2-3rd grades if chromatography lab is used). In addition, master teachers need to be identified who are interested in the science activities and will be willing to bring their class to the Science Education Lab on campus for a field trip in the spring semester.

SPRING SEMESTER

The Hands-On Science Activity will consist of three parts:

1. **Training of the Credential Candidates**
Each credential candidate will act as a helper for at least one presentation lead by a chemistry student who has been trained in the fall semester. This will involve reading the description of the activity in the teacher's guide, helping the leader set-up the lab, and assisting during the 1hr presentation to an invited 4-6th grade class.

2. **Presentation to the Master Teacher's Class**

The credential student will then be a leader for the presentation of the activity to their master teacher's class and will use the chemistry students as helpers.

3. **Presentation to Other Credential Students**

The 6-8 trained credential students will divide up into two groups each of which will then present the activity to approximately 20-30 other credential students not in this program. These 40-60 students will be selected by the Professional Studies Department and will act as the "5th Grade" classes in performing the hands-on activity.

The proposed budget of \$6000 will cover such items as CHEM kits for each of the master teacher's classrooms, cost of subscriptions to Wonder Science (ACS publication) for the master teachers and credential candidate participants, replacement of the supplies in the CHEM kits, and field trip travel funds. All funds will be used solely in support of the laboratory activities; no salaries or infrastructure support is requested.

Thank you for taking time to review our request.

Sincerely,

Mina L. Hector, Director
Science Education Laboratory
(Contact Person)
Department of Chemistry
CSU-Chico
Chico, CA 95929-0210
(916) 898-5226
email: mhector@oavax.csuchico.edu

Jesus Cortez, Director
Center for Bilingual/Multicultural Studies

Dr. Roger Lederer, Dean
College of Natural Science

Dr. Stephen King, Dean
College of Communication and Education