



UTAH SYSTEM OF HIGHER EDUCATION
STATE BOARD OF REGENTS

355 West North Temple • 3 Triad Center • Suite 550 • Salt Lake City, Utah 84180-1205
Telephone (801) 538-5247 Fax Number (801) 521-6930

M. ROLFE KERR
Commissioner and
Chief Executive Officer

June 1, 1992

J.D. Andrade
Ctr for Integrated Science Education
2480 MEB
University of Utah
Salt Lake City, Utah 84112

Dear Joe:

I am pleased to report that your proposal "Enhancing Elementary Teacher Competencies Via Integrated Science Education," submitted for funding through the Dwight D. Eisenhower Mathematics and Science Education Program, has been approved at a funding level of \$16,370. We anticipate that funding will be available on about August 15, 1992.

I will shortly be providing to you a copy of a reporting form which is to be completed at the conclusion of the project. This form will capture data elements now being required by the U.S. Department of Education. This reporting form should not be viewed as a replacement to assessment or evaluation activities contained in your proposal.

In addition, when schedules permit, I would like to plan an informal on-site visit to observe your training program. If there is a specific day or time that is particularly good for a visit, please let me know.

Best wishes for a successful program. Please contact me if I can be of additional assistance.

Sincerely,

Mark
Mark H. Spencer
Assistant Commissioner for
Academic Affairs

cc: Colleen Blankenship, Dean of Education
Hugo Rossi, Dean of Science

UNIVERSITY OF UTAH Salt Lake City 1850	WEBER STATE UNIVERSITY Ogden 1889	SNOW COLLEGE Ephraim 1888	COLLEGE OF EASTERN UTAH Price 1937	SALT LAKE COMMUNITY COLLEGE Salt Lake City 1947
UTAH STATE UNIVERSITY Logan 1888	SOUTHERN UTAH UNIVERSITY Cedar City 1897	DIXIE COLLEGE St. George 1911	UTAH VALLEY COMMUNITY COLLEGE Orem 1941	

OFFICIAL DOCUMENT SUMMARY SHEET
FOR PROCESSING OF PROPOSALS TO OFFICE OF SPONSORED PROJECTS

NO OF PROPOSALS TO
TO AGENCY: Original + 4
TO O.S.P.: 2

P.I.D. NO.:

For OSP use only

SECTION I (To be completed by the Principal Investigator or originating Department/Office) (SEE REVERSE SIDE).

PROJECT DETAILS (Check 1 box in each column)

<input checked="" type="checkbox"/> Grant	<input type="checkbox"/> Research Federal	<input type="checkbox"/> New
<input type="checkbox"/> Contract	<input type="checkbox"/> Research Non-Federal	<input type="checkbox"/> Renewal
<input type="checkbox"/> Clinical Test	<input checked="" type="checkbox"/> Instruct Service Federal	<input type="checkbox"/> Continuation
<input type="checkbox"/> Other Agreement	<input checked="" type="checkbox"/> Instruct Service Non-Federal	<input type="checkbox"/> Revised
	<input checked="" type="checkbox"/> Public Service Federal	<input type="checkbox"/> Supplemental
	<input checked="" type="checkbox"/> Public Service Non-Federal	
	<input type="checkbox"/> Other	

NOTE: Street Address (Bldg., Name/No. & Room No. required when hand delivered):
Name of AGENCY where Proposal is to be submitted:
State Board of Regents
Eisenhower Program
3 Triad Center #550
Salt Lake City, Utah 84108-1205

Deadline Date: _____ Account no. to be charged for special courier: _____

Postmark
 Due at Agency 4/4/94
 Special Courier

ATTENTION: Phyllis Safman
Telephone Number: _____

SECTION II (Indicate how project will aid academic program of University—if necessary, use additional sheet):
Enhancing Elementary Teacher Competencies via Integrated, Hands-On Science Project contributes to the University's evolving programs in undergraduate and community education; provides partial faculty, staff, and student support.

Principal Investigator Will Will not be on extended leave of absence during the project. J. Andrade is President of Protein
 Has Has no potential conflict of interest with private company or investment group. Solutions, Inc. (PSI)

Health and/or Safety reviews required (See reverse side): Yes No Committee/Board Approval
Indirect Cost Waiver requested (See reverse side): Yes No Waiver Approved: VP for research or designee:

AGENCY FUNDS (fill in dates and amounts):			UNIVERSITY FUNDS	
Dates	Immediate Period From: 8/1/94 To: 6/30/95	Total Period From: To:	Any box(es) check below? If yes, attach a Cost Sharing Data Sheet	
Direct Costs	\$ 14,286	\$	<input type="checkbox"/> Mandatory Cost Sharing/Matching	
Indirect Costs	\$ 714	\$	<input type="checkbox"/> Other type matching or contribution	
Total Costs	\$ 15,000	\$	<input type="checkbox"/> Indirect cost subsidy	
			<input type="checkbox"/> Cost Sharing shown for proposal review only	

DEPARTMENT AND COLLEGE APPROVALS	We certify that staff, space, equipment, computer time, etc., are available and/or budgeted herein. If not, attach statement of additional requirements. PI will submit the final technical report as required. PI will insure that he/she and those that he/she supervises comply with Policy & Procedures 6.4 regarding patents and inventions.	Originating College: Engineering	Department: Center for Integrated Science Education
		Room Number: 2480 MEB	Building No: 64
		Name of Department Liaison: J. Andrade	Mail Code: 06409
		Principal Investigator's Typed Name and Signature: J.D. Andrade	Telephone No.: 1-4379
		Department Chairperson's Signature: <i>Robert G. Mann</i>	Telephone No.: 1-4379
		Dean's Signature:	

SECTION II (To be completed by the Office of Sponsored Projects):
ADDITIONAL REQUIREMENTS BY THE UNIVERSITY

Items of special or unusual significance (Remodeling, etc.):

PROPOSAL OR APPLICATION REVIEW AND ROUTING

Reviewed by Sponsored Projects	DIRECTOR:	ADMINISTRATOR:	FED FLOW-THRU NO: YES:	AGENCY?
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Contract or Grant Number: _____
University Account No.: _____

Revised 2/1/92.

Time and Date Received at OSP

UTAH STATE BOARD OF REGENTS
PROPOSAL FOR FUNDS AUTHORIZED UNDER
Dwight D. Eisenhower Mathematics and Science Education Act
DUE ON APRIL 4, 1994

1. LEGAL APPLICANT/RECIPIENT

- a. Name Center for Integrated Science Education
- b. Institution University of Utah
- c. Street/P.O. Box 2480 MEB
- d. City Salt Lake City
- e. State/Zip Code Utah 84112
- f. Telephone number (801) 581-4379

2. TITLE OF PROJECT:

Enhancing Elementary Teacher Competencies via Integrated Science Education

3. PRIORITY ACTIVITY AREA:

A. Retraining -- Elementary

4. NUMBER OF INSERVICE TEACHERS PARTICIPATING: ELEM 150 SECONDARY _____

5. THE APPLICANT CERTIFIES THAT:

To the best of my knowledge and belief, data in this application are true and correct, and the applicant will comply with the assurances listed in herein.

J.D. Andrade, Director
(Applicants typed name and title)
Center for Integrated Science Education

J.D. Andrade
(Signature)

6. DEAN OF EDUCATION OF SPONSORING INSTITUTION:
(OR CHIEF ACADEMIC OFFICER OF TWO-YEAR INST.)

C. Blankenship
(Dean or other official name and title)
Graduate School of Education

(Signature)

SEND PROPOSALS TO:

Dr. Phyllis "Teddi" Safman
State Board of Regents
3 Triad Center, #550
Salt Lake City, UT 84180-1205

(801) 321-7119

Enhancing Elementary Teachers Competencies
via Integrated, Hands-On Science

B. Abstract*

Many elementary teachers have limited science competencies and high science anxiety levels (1). There is a growing awareness of the need to enhance their science competencies and skills. Science courses in colleges and universities tend to be rigidly compartmentalized into life science (biology), physical science (chemistry and physics), earth science (geology, oceanography, meteorology, space), or environmental science. There is growing interest in presenting and discovering science in an integrated fashion, using key concepts common to all of the various scientific disciplines (2).

The most common science courses taken by elementary teachers tend to be in the biology, health, or environment areas. Teachers' science anxiety levels tend to be higher for chemistry and physics.

We have developed and implemented a 10 hour inservice course for elementary teachers which builds on their interests and comfort level in biology and then extends their biology based observations into chemistry, physics, and geology. We use a fully integrated approach to developing and enhancing core science competencies using a hands-on, discovery approach. Our program is called Integrated Science Concepts and Themes -- Using Bioluminescence for Integrated Science Education (3).

Teachers who have had negative science experiences in their college studies have very high science anxiety levels. To minimize their fears, we intentionally chose a topic which is never covered in high school or college biology - they have never flunked or been humiliated by bioluminescence. The subject and the phenomenon is incredibly interesting and motivating. It is so widespread that key concepts in biology can be easily discovered. The light emission is due to chemical processes so many chemical concepts are naturally developed, including much of the Periodic Table. Light is photons - and thus many key concepts in physics are easily experienced.

It works. We offered inservice courses in the 1991-2 year in the Davis, Jordan and Salt Lake Districts followed by ~~seven~~ several inservices. an additional 12 in 1992-94

This proposal requests limited funds to permit the continuation of this activity. We request \$15,000 for the period August 1, 1994 through June 30, 1995 for an additional 5 - ten hour inservice courses in at least 3 different districts. The courses will be conducted by J. Andrade, with the assistance of staff and students in the University of Utah's Center for Integrated Science Education.

* Numbers in parentheses are references given in Section I.

C. Goals and Objectives

Our goal is simply to greatly diminish the science anxieties and fears of about 150 elementary teachers (mainly 4th-6th grade) by using an intrinsically exciting, motivating, and generally unknown phenomenon: bioluminescence. Participating teachers will discover and practice real, hands-on science - they will discover a range of science concepts and principles - they will see and learn the relations between these concepts - they will develop core content competencies in biology, chemistry, physics, geology, and environmental sciences. They will develop a self confidence in their ability to do science. They will receive a set of materials to use in their classroom which will allow them to involve their students in similar discovery and content development. We expect the experience gained in this project to form the basis for a larger proposal to the National Science Foundation's Teacher Enhancement Program, to be submitted in late 1994.

D. Proposed Activities

An outline of the 10 hour inservices is given in Appendix A - this is a modified and improved version of the 15 inservice courses already held and tested from 1991-94 in six different districts.

Figure 1 shows how bioluminescence is connected to many key topics in the classical disciplines.

We do not intend to cover all of these topics in one 10 hour inservice! The selection of topics depends in part on class background, interest, questions, and discussion. Science is learned best when the learner is interested and motivated. The course is responsive to the interests and motivations expressed in each individual class.

We propose five -- 10 hour inservices (probably in September, October, November, January, and February, for up to 30 teachers (5 x 2₅ = 150 total). Three of these are already tentatively scheduled, involving schools that could not be accommodated in the 1993-94 series.

E. Population

The courses are targeted to 4th-6th grade teachers, K-10th grade are admitted on a space available basis. We work with the district in service coordinators and principals to encourage teachers with high science fears to attend. We expect to reach 150 teachers in the 1994-95 year.

F. Monitoring and Evaluation

Each inservice course is evaluated by the district.

These results were used to prepare a paper for publication (App. B). Additional papers to professional teacher education journals are in preparation.

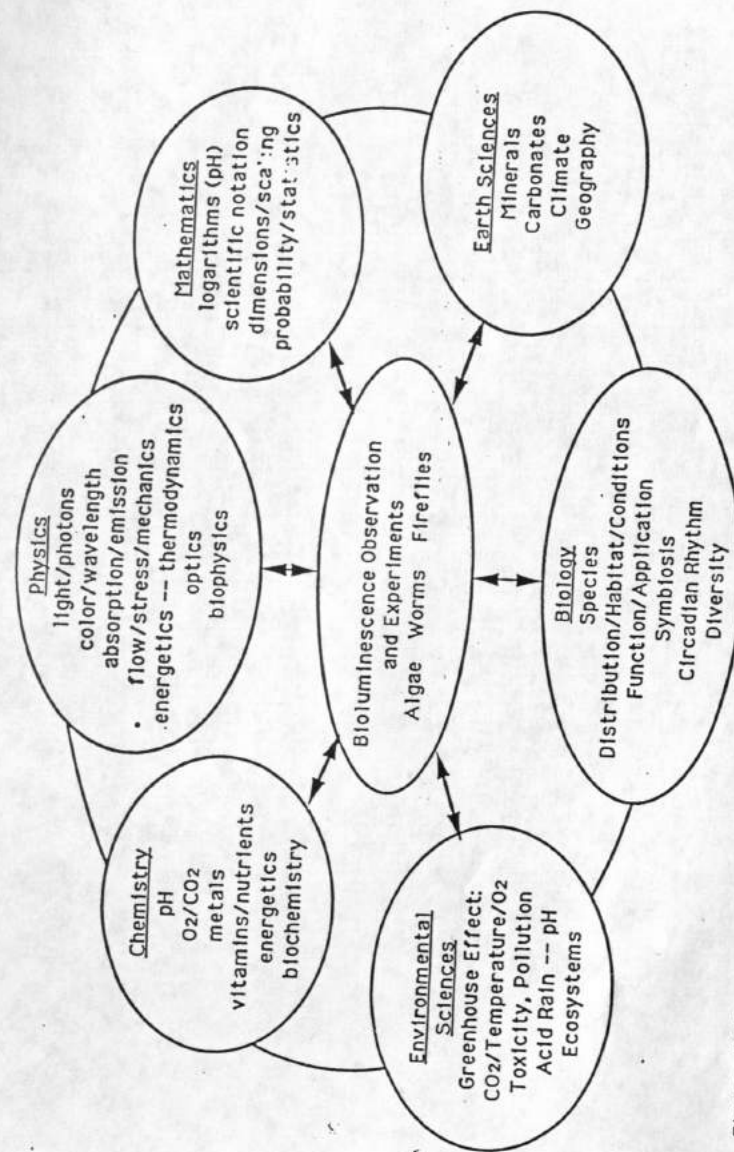


Figure: Bioluminescent organisms and their observation are shown as the center of an integrated science "wheel." Each of the classical specialties or disciplines are indicated with selected subject examples. These subjects and topics can all be directly observed and experimentally studied via bioluminescence.

TABLE 1

1993 - '94 Inservices

The Center for Integrated Science Education (CISE)

University of Utah, 2480 MEB

Phone: (801) 581-4171

SLC, UT 84112

FAX: (801) 585-5361

E-Mail: JDANDRAD@CC.UTAH.EDU

Mara Lisonbee: (801) 585-3128

Eric Stroup: (801) 581-8611

Mary McDonald (801) 581-4171

1993-'94 Inservices on Integrated Science Concepts and Themes

Dates	Time	Location	Coordinator	District
Jan. 15-16, '93	Fri. 4:00-7:00 pm Sat. 9:00 am - 3:00 pm	Tooele High School	Joe Trujillo 355-4740 Bob Young 833-1961	Tooele
Jan. 22-23, '93	Fri. 4:00-7:00 pm Sat. 9:00 am - 3:00 pm	Tooele High School	Joe Trujillo 355-4740 Bob Young 833-1961	Tooele
Feb. 16-18, '93	Tues, Weds, Thurs 3:30-6:45 pm	Roy High School 2150 W. 4800 S., Roy, 84067	Brett Moulding 774-4922, 731-4564 h	Weber
Feb. 26-27, '93	Fri. 4:00-7:00 pm Sat. 9:00 am - 3:00 pm	Tooele High School	Joe Trujillo 355-4740	Tooele
Mar 4, 11 Apr. 1, '93	4:00-7:30 pm	Amer. Fork Jr HS	Lynn Haskell 756-8477	Alpine
Apr. 15-16, '93	Fri. 3:30-6:30 pm Sat. 8:00 am - 3:30 pm	Granger High School 3600 W 3690 S	Nola Ostroff 268-8530	Granite
Apr. 20-22, '93	4:00-7:30 pm	Farmington Elem.	LaMont Jensen 451-1251	Davis
Sept. 25, '93	Sat. 9:00-12:00	Weber State	R. Vineyard	Weber
Oct. 9-10, '93	Fri. 4:00-7:30 pm Sat. 8:00-4:00 pm	Orangeville	Roma Powell 687-9846	Emer/
Nov. 2-4, '93	T,W,Thu. 4:00-7:30 Rm 110 & 111	Park City Hi School P.O. Box 680310	Pat Horny 645-5600 X 120	
Feb. 11, 12, '94	Fri. 4:00-7:30 pm Sat. 8:00-3:00 pm	Spanish Fork 350 So Main, 84660	Nedra Kalk/ Leslie Jorgansen 798-4000 X 21	Nebo
Apr. 15, 16, '94	Fri. 4:00-7:30 Sat. 8:00-4:00	SLC District Office	Darla Motzkus 578-8256	Salt Lake
To be scheduled		Castle Dale, Box 120 Huntington, 84528	Roma Powell 687-9846	Emery
To be scheduled		Spanish Fork Intermediate School 350 S Main, SP 84660	Nedra Kalk 798-4000 X 21	Nebo
To be scheduled		Jordan District	Jean Woolam	Jordan

Feb 9, 9
Tues 12-5
Wed 12-5
Cak Hills
Elam
Davis
V. Major
298 5838
Davis

1994-5 (tentative - to be scheduled)
Bonnyview High School S. Ballou 264-7470 Murra
Libby Edward Elam R. Ruloff. 584 5347 Gran
Spanish Fork Intermed. Nedra Kalk 798 4000 x 21 Nebo
Leslie Jorgansen

We distribute the names and addresses of all participants so that the teachers have a network of friends and colleagues they can call to share experiences, frustrations, successes, etc. In addition, they are encouraged to call the professional staff at the Center for Integrated Science Education for help and input.

G. Budget

Personnel	Salary
J. Andrade, Project Director	2,000
Technician	4,000
Secretary	1,500
Biology student	2,000
Subtotal	\$9,500
Benefits	3,135
Materials and Supplies	1,151
Telephone, Postage, and Printing	500
Total Direct Costs	\$14,286
Indirect Costs (5%)	714
Total Costs	\$15,000

H. Assurance Statement

No other funds are available for this project. The funds requested in the grant will not supplant any other funds.

J. D. Andrade
J. D. Andrade, Director
Center for Integrated Science Education
University of Utah

J. Professional Staff

J. Andrade, Professor of Bioengineering and Director of the Center for Integrated Science Education, will direct the project and personally conduct the inservices. Joe has been working with integrated science education and bioluminescence for 4 years. He is an accomplished scientist and teacher and is deeply committed to the enhancement of elementary teacher science competency.

J. Gess-Newsome is the Science Methods Specialist in the Department of Educational Studies at the University of Utah. Although Julie does not have time to be directly involved in the inservices, she advises Dr. Andrade as needed.

Ms. Mara Lisonbee will prepare the needed materials and assist Dr. Andrade in preparing for the courses and in the conduct of some of the sessions. They both have the ability to cut through science anxieties and fears, to get the teachers to relax, and to have them enjoy science. They will be assisted by an undergraduate student and a part time staff technician.

Bio-Sketch
J.D. Andrade

Joe Andrade is Professor of Bioengineering, of Materials Science and Engineering, and of Pharmaceutics at the University of Utah and is the former Dean of the College of Engineering (1983-87). Several years ago Joe became increasingly interested in the issue of science education for the general population. He taught a course in the Department of Communications two years ago titled "Critical Science Communication, Separating Fact From Fantasy," which was stimulated by the University of Utah's press release dealing with cold fusion and the public interest which ensued. He has as strong interest in the science education of journalists and of teachers.

While in graduate school Joe taught high school general science, biology, and chemistry in a parochial high school in Denver, where the "Science by Seduction" concept was practiced. Basically, his students had all been expelled from the public schools, and it appeared that the only thing that attracted their attention was sex. That became the underlying theme and concept of the life science and biology course, and he managed to find ways to tie a significant part of a high school biology curriculum to the general theme of sex.

Joe was also in a cooperative elementary program when his two boys were in elementary school and taught 4-6 grade 6 hours a week for 3 years. His wife, Barbara, is a first grade teacher with some 12 years of teaching experience, and they have worked closely together in developing experiential modules for elementary students based on the phenomena of bioluminescence.

Joe recently decided to devote a significant portion of his time and career to the area of science education. He recently established the Center for Integrated Science Education at the University of Utah, and is working to involve faculty, staff, and graduate students on campus with interests in science education. He has provided 15 inservices to local school districts involving some 300 teachers. He and his co-workers have also presented courses and workshops for Girl Scouts and local nature study groups.

He is an accomplished scientist and engineer with 5 books, over 100 peer reviewed papers, and 5 patents. His research group focuses on proteins at interfaces and proteins as engineering machines and devices.

Joe's interest in bioluminescence began in 1985 when he began doing some simple "discovery" experiments. Work began in earnest in the Fall of 1987. Protein Solutions, Inc. (PSI) was established in early 1988 with the goal of developing bioluminescence for the children's education and toy markets. PSI has been funding bioluminescence work in Andrade's lab for over 4 years. It was already clear in 1987 that bioluminescence was a real attention-getter and motivator of children and adults. Andrade's wife, Barbara, is a first grade teacher. Together, they developed several demonstrations and experiments.

Joe also serves as Program Co-Chair for the Utah Science Center, a state Centennial project to develop a discovery based science center for Utah.

I. References:

1. S. Loucks-Horsley, et al. Elementary School Science for the 90's, Assoc. for Supervision and Curriculum Development, Alexandria, VA, 1990.
2. F.J. Rutherford and A. Ahlgren, Science for all Americans, Oxford University Press, 1991.
3. J. Andrade, J. Tobler, M. Losonbee, "Using Bioluminescence for Science Education," in A.A. Szalay, ed. Bioluminescence and Chemiluminescence -- Status Report, Wiley, 1993, (enclosed as Appendix A).



UTAH SYSTEM OF HIGHER EDUCATION
STATE BOARD OF REGENTS

355 West North Temple • 3 Triad Center • Suite 550 • Salt Lake City, Utah 84180-1205
Telephone (801) 538-5247 Fax Number (801) 521-6930

WM. ROLFE KERR
Commissioner and
Chief Executive Officer

May 17, 1993

J.D. Andrade
Ctr for Integrated Science Education
2480 MEB
University of Utah
Salt Lake City, Utah 84112

Dear Joe:

I am happy to report that your proposal "Enhancing Elementary Teacher Competencies Via Integrated Science Education," submitted for funding through the Dwight D. Eisenhower Mathematics and Science Education Program, has been approved at a funding level of \$15,000. This funding level is reduced from the amount requested, but will hopefully allow you to proceed with some elements of the program. If you agree to proceed at this level, please submit a revised budget at your convenience. We anticipate that funding will be available on about August 15, 1993.

I will shortly be providing to you a copy of a reporting form which is to be completed at the conclusion of the project. This form will capture data elements now being required by the U.S. Department of Education. This reporting form should not be viewed as a replacement to assessment or evaluation activities contained in your proposal.

In addition, when schedules permit, I would like to plan an informal on-site visit to observe your training program. If there is a specific day or time that is particularly good for a visit, please let me know.

Best wishes for a successful program. Please contact me if I can be of additional assistance.

Sincerely,

Mark
Mark H. Spencer
Assistant Commissioner for
Academic Affairs

cc: Colleen Blankenship, Dean of Education
David Pershing, Dean of Engineering

UNIVERSITY OF UTAH Salt Lake City 1850	WEBER STATE UNIVERSITY Ogden 1889	SNOW COLLEGE Ephraim 1888	COLLEGE OF EASTERN UTAH Price 1937	SALT LAKE COMMUNITY COLLEGE Salt Lake City 1947
UTAH STATE UNIVERSITY Logan 1888	SOUTHERN UTAH UNIVERSITY Cedar City 1897	DIXIE COLLEGE St. George 1911	UTAH VALLEY COMMUNITY COLLEGE Orem 1941	

UTAH STATE BOARD OF REGENTS
PROPOSAL FOR FUNDS AUTHORIZED UNDER
Dwight D. Eisenhower Mathematics and Science Education Act
DUE ON APRIL 26, 1993

1. LEGAL APPLICANT/RECIPIENT

a. Name Center for Integrated Science Education
b. Institution University of Utah
c. Street/P.O. Box 2480 MEB
d. City Salt Lake City
e. State/Zip Code Utah 84112
f. Telephone number (801) 581-4379

2. TITLE OF PROJECT:

Enhancing Elementary Teacher Competencies via Integrated Science Education

3. PRIORITY ACTIVITY AREA:

A. Retraining -- Elementary

4. NUMBER OF INSERVICE TEACHERS PARTICIPATING: ELEM 125 SECONDARY

5. THE APPLICANT CERTIFIES THAT:

To the best of my knowledge and belief, data in this application are true and correct, and the applicant will comply with the assurances listed in herein.

J.D. Andrade, Director
(Applicants typed name and title)
Center for Integrated Science Education

J.D. Andrade
(Signature)

6. DEAN OF EDUCATION OF SPONSORING INSTITUTION:
(OR CHIEF ACADEMIC OFFICER OF TWO-YEAR INST.)

C. Blankenship, Dean
(Dean or other official name and title)
Graduate School of Education

Colleen J. Blankenship
(Signature)

SEND PROPOSALS TO:

Dr. Mark H. Spencer
State Board of Regents
3 Triad Center, #550
Salt Lake City, UT 84180-1205

(801) 538-5247

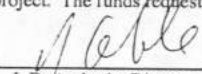
We will also distribute the names and addresses of all participants so that the teachers have a network of friends and colleagues they can call to share experiences, frustrations, successes, etc. In addition, they will be encouraged to call the professional staff at the Center for Integrated Science Education for help and input.

G. Budget

<u>Personnel</u>	<u>Salary</u>
J. Andrade, Project Director	3,000
Technician	4,000
Secretary	1,500
Biology student	2,000
Subtotal	\$10,500
Benefits	3,640
<u>Materials and Supplies</u>	1400
<u>Telephone, Postage, and Printing</u>	500
<u>Total Direct Costs</u>	\$16,040
<u>Indirect Costs (5%)</u>	802
<u>Total Costs</u>	\$16,842

H. Assurance Statement

No other funds are available for this project. The funds requested in the grant will not supplant any other funds.


J. D. Andrade, Director
Center for Integrated Science Education
University of Utah

J. Professional Staff

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UTAH STATE BOARD OF REGENTS
PROPOSAL FOR FUNDS AUTHORIZED UNDER
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1. LEGAL APPLICANT/RECIPIENT

a. Name Center for Integrated Science Education
b. Institution University of Utah
c. Street/P.O. Box 2480 MEB
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f. Telephone number (801) 581-4379

2. TITLE OF PROJECT:

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3. PRIORITY ACTIVITY AREA:

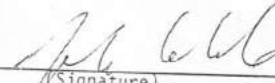
A. Retraining -- Elementary

4. NUMBER OF INSERVICE TEACHERS PARTICIPATING: ELEM 125 SECONDARY

5. THE APPLICANT CERTIFIES THAT:

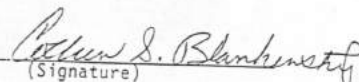
To the best of my knowledge and belief, data in this application are true and correct, and the applicant will comply with the assurances listed in herein.

J.D. Andrade, Director
(Applicants typed name and title)
Center for Integrated Science Education


(Signature)

6. DEAN OF EDUCATION OF SPONSORING INSTITUTION: (OR CHIEF ACADEMIC OFFICER OF TWO-YEAR INST.)

C. Blankenship, Dean
(Dean or other official name and title)
Graduate School of Education


(Signature)

SEND PROPOSALS TO:

Dr. Mark H. Spencer
State Board of Regents
3 Triad Center, #550
Salt Lake City, UT 84180-1205

(801) 538-5247

~~BP~~ CISE

1 June, 1993

Dr. Marc Spencer
State Board of Regents
3 Triad Center, #550
Salt Lake City, UT 84180-1205

Dear Dr. Spencer,

Thank you for your recent letter informing me that the grant we submitted to the State Eisenhower math and science education program titled "Enhancing Elementary Teacher Competencies via Integrated Science Education" will be funded at the level of \$15,000. You asked for a revised budget and that is enclosed.

Thank you for your support of this project. We look forward to providing the inservices during the 1993-4 academic year.

Please let me know if you need any further information.

Sincerely,

J.D. Andrade, Ph.D.
Professor

cc. C. Blankenship, Dean Graduate School of Education
D. Pershing, Dean College of Engineering
Robert Glass, Director, Office of Sponsored Projects

Encl.

cise
dic/jun1