Title of Project: Geoscience Technology Program Improvement

Name of Institution: Santa Barbara City College
Address: 721 Cliff Drive, Santa Barbara, California Zip 93109

Type of Institution: Public [X] Private [ ] 2-year [X] 4-year or more [ ]

Grant to: Santa Barbara Community College District
Address: 721 Cliff Drive, Santa Barbara, Calif. Zip 93109

GLENN G. GOODER, Superintendent-President
(Name and title of chief administrative officer of grantee institution)

Project Director: C. Richard Willingham 571-62-8303
Social Security No. (See p.5)

Title and Academic Address: Asst. Professor, 721 Cliff Drive, Santa Barbara, Ca 93109
Telephone (include Area Code) (805) 965-0581, Ext. 314 (Office) (805) 968-1325 (Home)

Scientific Disciplines Included - Major Geophysics/Geology
Other

A. Major Disciplinary Code(s) (See p. A-I-2) EZ
B. Field of Science and Engineering (See p. A-I-2) 4200000 GEOL SCI
C. Field(s) of Interest and Application (See p. A-I-3) 0101000 CURR DEVEL

Costs requested from NSF: Direct $25,000 Indirect $____ Total $25,000
(Round to nearest $100)

Costs to be made available from Non-Federal sources: $14,153

Number of students to be affected over a 5-year period 310

From 10, the number who are expected to continue scientific studies toward
M.S. or Ph.D degrees No way to estimate program designed as a 2-yr. program, but
articulates with 4-yr. baccalaureate.

Proposed duration of the project: 18 months

Target date for initiating activities under this grant: July 1, 1977

Are funds for any parts of the project proposed herein being requested in another
proposal to NSF or some other Federal agency? No If yes, explain on reverse side.

Date Submitted: November 5, 1976

Signature of Project Director named in 6) C. RICHARD WILLINGHAM
(Signature of Administrator named in 5) GLENN G. GOODER, Ph.D.
**LOCAL COURSE IMPROVEMENT**

**NAME OF INSTITUTION**  
SANTA BARBARA CITY COLLEGE

**ADDRESS OF INSTITUTION (INCLUDE BRANCH/CAMPUS & COMPONENT)**  
721 Cliff Drive  
Santa Barbara, California 93109

**PRINCIPAL INVESTIGATOR**  
C. Richard Willingham

**TITLE OF PROJECT**  
Geoscience Technology Program Improvement

**SUMMARY OF PROPOSED WORK**

The objectives of this proposal from Santa Barbara City College involve the staff of the Department of Earth and Planetary Sciences in the accomplishment of the following improvements in the Geoscience Technology Program:

1. Development of nine advanced multi-media/auto-tutorial programmed training units in areas of geophysical instrumentation techniques & geological lab and field techniques.
2. Improve the utilization and assimilation of computer techniques & programs in the training of geoscience technicians.
3. Improve field instructional experience for geoscience technicians.

The anticipated outcomes of this proposal include:

1. Increased learning & cost efficiencies through development of advanced multi-media/auto-tutorial training units for use in the Geoscience Technology Program.
2. Improved, expanded & new geoscience computer teaching models & programs.
3. Improvement of field training models, exercises, and techniques.
4. Overall capability of accommodating twice the enrollment in technically complex courses.

All of the above will result in the output of more and better qualified technicians for the energy and resource sectors of the nation.
LOCAL COURSE IMPROVEMENT
BUDGET SUMMARY

A. SALARIES, WAGES, AND BENEFITS

1. Professional Staff $12,500
2. Assistants 4,228
3. Secretarial and Clerical 2,920
4. Dept. Chairman 2,500

5. TOTAL: SALARIES AND WAGES (1 thru 4) $22,148

6. Staff Benefits (when charged as direct costs) 1,993

7. TOTAL: SALARIES, WAGES, AND BENEFITS (5 & 6) 24,141

B. OTHER PERSONNEL EXPENSES

8. Consultants $1,520
9.
10.
11.
12.

13. TOTAL: OTHER PERSONNEL EXPENSES (8 thru 12) 1,520

C. OTHER DIRECT COSTS

14. Equipment $1,040
15. Laboratory and Instructional Materials 2,800
16. Office, drafting, and art supplies 300
17. Travel 1,970
18.
19.
20.

21. TOTAL: OTHER DIRECT COSTS (14 thru 20) 6,110
22. TOTAL: DIRECT OPERATING COSTS (SUM: 7,13,21) 31,771
23. INDIRECT COSTS ( % of line __) 7,382
24. TOTAL OPERATING COSTS (22 plus 23) 39,153
25. LESS LOCAL CONTRIBUTION (at least 1/3 of line 24) (14,153)
26. NSF REQUEST (not to exceed $25,000) 25,000
# Local Course Improvement (LCI)

## Detailed Budget

(Direct Costs Only)

**Name of Institution:** SANTA BARBARA CITY COLLEGE  
**Project Director:** C. Richard Willingham

<table>
<thead>
<tr>
<th>Budget Summary Line Item</th>
<th>Activities</th>
<th>Refer to Narrative Page No.</th>
<th>First Year</th>
<th>Second Year</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Director Summer Salary</td>
<td></td>
<td>2,000</td>
<td>2,500</td>
<td>4,500</td>
</tr>
<tr>
<td>1.</td>
<td>Faculty Assoc. Summer Salary</td>
<td></td>
<td>4,000</td>
<td>4,000</td>
<td>8,000</td>
</tr>
<tr>
<td>2.</td>
<td>Geologic Illustration</td>
<td></td>
<td>1,720</td>
<td>1,720</td>
<td>3,440</td>
</tr>
<tr>
<td>2.</td>
<td>Computer Programming</td>
<td></td>
<td>450</td>
<td>338</td>
<td>788</td>
</tr>
<tr>
<td>3.</td>
<td>Secretary</td>
<td></td>
<td>1,460</td>
<td>1,460</td>
<td>2,920</td>
</tr>
<tr>
<td>4.</td>
<td>Chrman. Dept. Articulation Admin.</td>
<td></td>
<td>1,250</td>
<td>1,250</td>
<td>2,500</td>
</tr>
<tr>
<td>8.</td>
<td>AV Consultant</td>
<td></td>
<td>200</td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>8.</td>
<td>Geological Tech.</td>
<td></td>
<td>320</td>
<td></td>
<td>320</td>
</tr>
<tr>
<td>8.</td>
<td>Geophysical Tech.</td>
<td></td>
<td>480</td>
<td></td>
<td>480</td>
</tr>
<tr>
<td>14.</td>
<td>Calculators-2 Printers-2</td>
<td></td>
<td>1,040</td>
<td></td>
<td>1,040</td>
</tr>
<tr>
<td>15.</td>
<td>Aerial Photo Enlargements</td>
<td></td>
<td>600</td>
<td></td>
<td>600</td>
</tr>
<tr>
<td>15.</td>
<td>Base Maps 1:200 &amp; 1:400</td>
<td></td>
<td>450</td>
<td></td>
<td>450</td>
</tr>
<tr>
<td>15.</td>
<td>Standard Aerial Photos</td>
<td></td>
<td>250</td>
<td></td>
<td>250</td>
</tr>
</tbody>
</table>
## Local Course Improvement (LOCI)

### Detailed Budget

(Direct Costs Only)

| Name of Institution: Santa Barbara City College | Project Director: C. Richard Willingham |

<table>
<thead>
<tr>
<th>Budget Summary Line Item</th>
<th>Activities</th>
<th>Refer to Narrative Page No.</th>
<th>First Year</th>
<th>Second Year</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td>35mm Color Slide Film &amp; Process</td>
<td></td>
<td>600</td>
<td>600</td>
<td>1,200</td>
</tr>
<tr>
<td>15.</td>
<td>Audio tape Cassettes</td>
<td></td>
<td>150</td>
<td>150</td>
<td>300</td>
</tr>
<tr>
<td>16.</td>
<td>Office Supplies</td>
<td></td>
<td>150</td>
<td>150</td>
<td>300</td>
</tr>
<tr>
<td>17.</td>
<td>Remote Data gathering field trips</td>
<td></td>
<td>630</td>
<td>--</td>
<td>630</td>
</tr>
<tr>
<td>17.</td>
<td>Industrial Plant/ Lab Visits</td>
<td></td>
<td>270</td>
<td>270</td>
<td>540</td>
</tr>
<tr>
<td>17.</td>
<td>Consultant Travel</td>
<td></td>
<td>700</td>
<td>100</td>
<td>800</td>
</tr>
</tbody>
</table>
FISCAL DISCUSSION (Budget Narrative)

A. Salaries, Wages and Benefits

1. Professional staff

a. Project Director, Summer Salary
   Summer 1977 (1/2 time, 2 mo., @ $2,000/mo.) $ 2,000
   Summer 1978 (5/8 time, 2 mo., @ $2,000/mo.) 2,500

b. Faculty Associates, Summer Salary, 2 Instructors
   Summer 1977 (1/2 time, 2 mo., @ $2,000/mo.each) 4,000
   Summer 1978 (1/2 time, 2 mo., @ $2,000/mo.each) 4,000

2. Assistants

a. Geologic Illustrator, Summer Salary
   Full-time, 2 mo. each summer @ $860/mo. 3,440

b. Computer Programmer/Analyst
   Summer 1977 (1/3 time, 1 mo. @ $1,350/mo.) 450
   Summer 1978 (1/4 time, 1 mo. @ $1,350/mo.) 338

3. Secretarial/Clerical
   1 secretary, full-time, 2 mo. each summer @ $730/mo. 2,920

4. Department Chairman (1/20 of total base salary for articulation and administration) 2,500

5. Staff Benefits (includes Retirement, Health/Medical, Workmen's Compensation, Social Security, and State Unemployment Insurance for non-professional personnel. Also Workmen's Compensation for professional.) 1,993

B. Other Personnel Costs

8. Consultants

a. Audio-visual consultant to assist in production of multi-media units - 2 days each summer @ $100/day 400

b. Geological Technician 4 days @ $80/day 320

c. Geophysical Technician - 6 days @ $80/day 480
C. Other Direct Costs

14. Equipment – 2 Programmable Calculators/Printers, Texas Instruments SR 52 and PC-100 printer, or equivalent @ $520 each 1,040

15. Laboratory and Instructional Materials
   a. Aerial photo enlargements for field crews, including special flights 600
   b. Base maps with topographic controls on scales of 1:200 and 1:400 with contour intervals of 20 ft. 450
   c. Standard aerial photos and topographic maps. 250
   d. Film, 35mm., color slide Kodachrome 64, or equivalent with processing, 240 rolls @ $5/roll 1,200
   e. Audio tape cassettes, 100 @ $3 each 300

17. Travel
   a. Staff – 2 trips, 2 persons each trip, to gather field data. 100 mi. each @ $.15/mi., plus 6 days @ $25 per diem per person 630
   b. Staff – 6 trips, 2 persons each trip to local industrial labs for A-V materials and info. 200 mi. each @ $.15/mi., plus 1 day at $30 per diem per person 540