Preliminary Agenda
Colorado School of Mines
Board of Trustees Meeting
September 9, 1994
9:00 a.m.

Oath of Office

I. CONSENT CALENDAR

The following items are of a routine/general nature, but do require a motion of approval by the Board. They will be approved en masse unless a Trustee requests that specific items be moved to the Discussion Calendar. Should a Trustee have a question on any of these items or need a clarification, he or she may of course request it.

a. Consideration of previous minutes.

b. Revision to Schedule of Tuition, Fees and Other Charges.

c. Revision to the 1994-95 Budget.

d. Bank Resolution.

e. Academic Initiatives Report.

f. Existing Program Review Report.

g. Name change for Department of Mineral Economics.

h. Visiting Committee responses.
Petroleum Engineering Department
Metallurgical and Materials Engineering Department

II. INFORMATION CALENDAR

The following items are presented to the Board for information only. They will not be reviewed at the Board meeting unless a Trustee has a question or requests clarification on a particular item. The purpose of these reports is to provide background information to keep Board members apprised of the overall staff operations of the School.

a. Faculty hiring actions.

b. Graduate School admissions

c. Enrollment
-Admissions

d. Sponsored Projects.

e. Financial.
-Monthly reports.

f. Safety report.

g. Institutional Advancement reports.

h. 1995-96 Budget Request Narrative.

i. CSM Cultural Diversity Plan.

j. 1994-95 Board meeting schedule.

III. PRESENTATIONS

a. Faculty Senate report.

b. Legislative report.

c. Curriculum revision update.

d. Construction on campus report.

e. Student Center renovation status report.

IV. EXECUTIVE SESSION

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number I-a
Presented by Ansell

Subject: Consideration of previous minutes

Background Information:

Action Motion Requested:

Request motion to approve minutes of meeting held on June 9, 1994.

RECORD OF PROCEEDINGS

Estes Park, Colorado
June 9, 1994

The Board of Trustees met in regular session on June 9, 1994, at 7:00 p.m.

Trustees present: Ms. Allen, Mr. Coors, Mr. Erisman, Ms. Jeanperrin, Mr. Miller, Mr. Stott and Mr. Wood. Student Trustee elect-Stucky, who will take his oath of office at the September Board of Trustees meeting, also attended.

Trustees absent: Mr. Joseph.

Also attending the meeting were President Ansell; Vice Presidents Cheuvront, Powers and Schowengerdt; Dr. Copeland, faculty representative to the Board; Mr. Zehr, Executive Director of the CSM Alumni Association; other staff members and visitors.

Mr. Wood presided.

Recognition of Ms. Jeanperrin. Mr. Wood presented a silver Certificate of Appreciation to student Trustee Jeanperrin. The Certificate reads:

In recognition of her
loyal and meritorious service as
a member of the Board of Trustees,
this certificate is presented to
JANELLE JEANPERRIN
by the Board of Trustees upon the
occasion of expiration of the term
June thirtieth, one thousand nine hundred and ninety-four.

Previous Minutes. The minutes of the previous meeting held on May 5, 1994, were approved.

Fiscal Year 1994-95 Budget Adjustments. Dr. Schowengerdt and Ms. Deits reminded the Board that the 1994-95 budget for academic faculty compensation includes assumptions for departmental charge-out to research projects, and a target of $607K is budgeted for academic faculty charge-out. The 1994-95 budget also includes $324K each for overhead return and cost sharing. Dr. Schowengerdt and Ms. Deits are proposing that the dollars budgeted for overhead return and cost sharing be transferred to academic faculty compensation so that the departmental charge-out assumptions are eliminated.

The department heads have stated that they would like to be more involved in managing their compensation accounts. Academic year charge-out by faculty members will result in savings for their compensation accounts; department heads will have the discretion to use the savings for a variety of activities including, but not limited to, research development, and additional adjunct staff.

The Board unanimously approved the Fiscal Year 1994-95 budget adjustments.

Addition to CSM Visiting Committee. Dr. Schowengerdt recommended that Dr. Todd K. Jones be asked to serve on the Library Visiting Committee. Dr. Jones received his B.S. from

CSM, a Ph.D. from the University of Illinois and did postdoctoral work at Harvard. He now works in pharmaceutical research and synthesis.

The Board unanimously approved Dr. Schowengerdt's recommendation.

Ten-Year Capital Construction Program. President Ansell reviewed the report which had been provided for the Board. Extensive discussion ensued, following which the Board unanimously approved the Ten-Year Capital Construction Program.

Faculty Hiring Actions. No new faculty hiring actions were reported at this meeting.

Graduate School Admissions. Dr. Kidnay provided the Fall 1994 Graduate Admissions Report.

Enrollment - Admissions. Mr. Young provided the Admissions Report for Fall 1994.

Sponsored Projects. Dr. Kidnay provided the reports on new research award volume for May 1994.

Monthly Financial Reports. Ms. Deits and Mr. Carter provided the following reports: Auxiliary and Self-Funded Activities for the Eleven Months Ending May 31, 1994; Current Funds Revenues, Expenditures, and Other Changes for the Eleven Months Ending May 31, 1994; and State Appropriated Funding Revenues, Expenditures, and Other Changes Projected June 30, 1994.

Environmental Health and Safety Report. Mr. MacPherson submitted the Environmental Health and Safety Report for the month of May 1994.

Institutional Advancement Reports. Mr. Powers provided the following reports: Development Report Summary Through May 31, 1994; Summary of Cash for Fiscal Year through May 31, 1994; Summary of Commitments for Current Fiscal Year through May 31, 1994; Summary of Commitments for Campaign through May 31, 1994; RESOURCES: The Campaign for Colorado School of Mines, A Pattern for Success to Raise $60,000,000, as of May 31, 1994; and Campaign Objectives Report, Gifts and Pledges through May 31 1994.

Administrative Faculty Salaries for Fiscal Year 1994-95. President Ansell reviewed the list of administrative faculty salaries for 1994-95, and reminded the Board that the Fiscal Year 1994-95 budget, as approved by the Board at its May 1994 meeting, included a four percent salary increase for all academic and administrative faculty. He told the board that the Office of Budget and Planning will be conducting a market survey over the course of the next nine months, and those survey results will be used in setting administrative faculty salaries for the 1995-96 fiscal year.

President Ansell informed the Board that a recent state law rendered it illegal to issue term employment contracts to exempt, nontenured/tenure-track employees. Accordingly, the administration will be implementing a new procedure for the 1994-95 administrative faculty employment process, taking into consideration the new employee-at-will status.

Classified Employees Advisory Council. Ms. Lois Grant, Chairperson of the CSM Classified Employees Advisory Council, provided a written report of Council activities for June 1993 to June 1994.

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number I (b)
Presented by Deits

Subject:

Revision to Schedule of Tuition, Fees, and Other Charges

Background Information:

The Board of Trustees approved the Schedule of Tuition, Fees, and Other Charges for Fiscal Year 1994-95 on May 5, 1994. Your approval of three revisions is requested.

The first revision is the effective date of the Schedule. The document presented to you in May, 1994 stated the new Schedule would be effective Summer Semester, 1994. Our long standing policy is that the new Schedule becomes effective Fall Semester of each year.

The tuition rate for the Executive Program in Mineral Economics was stated as $8,000; the rate is $18,000.

An updated copy of page one of the Schedule of Tuition, Fees, and Other Charges is attached.

The Trustees were informed in May that the Meal Plan rates stated in the Schedule were subject to change prior to the start of the academic year. The attached documentation from Student Life lists the negotiated rates now being assessed to students. The documentation also includes requests to decrease rental rates for Prospector Village and to increase the amount of the required damage deposit.

Action Motion Requested:

Motion to approve.

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Schedule of Tuition, Fees, and Other Charges

Following is the 1994-95 fiscal year proposed list of tuition, fees, and other charges. This list is indexed to provide a comprehensive list of tuition, fees, and charges assessed by the Colorado School of Mines.

Tuition

Academic and Field Courses

Credit Hours	AY 1993	AY 1994	AY 1995
Resident:			
Less than 10	$ 130/hour	$ 133/hour	$ 140/hour
10 or more	$1,952/term	$1,991/term	2,091/term
Nonresident:			
Less than 10	$ 361/hour	$ 386/hour	$ 413/hour
10 or more	5,410/term	5,789/term	6,195/term

The above are applicable to all academic periods and to both graduate and undergraduate courses. The new Schedule of student tuition and fees become effective Fall Semester 1994.

Other Courses and Programs

Extended Studies	$ 124/hour	$ 130/hour	$ 150/hour
Executive Program in Mineral Economics (including Fees)	$12,600	$14,000	$18,000

Special Tuition Rates

Senior citizens (60 yrs or older)	Waiver of tuition for up to 3 credit hours per academic period regardless of state of residency.
High school students	67% of regular tuition rates.
TRIBES(Tribal Resource Institute in Business Engineering& Science)	Hourly RESIDENT tuition rate regardless of state residency and total hours in which enrolled (Summer only.)
CSM Employees	Waiver of tuition for up to 3 credit hours per academic period regardless of state of residency.

Student Life
Colorado School of Mines
Golden, CO 80401-1887
303/273-3350
FAX: 303/273-3278

COLORADO SCHOOL OF MINES
GOLDEN, COLORADO 80401-1887

TO: DR. HAROLD R. CHEUVRONT, V.P. FOR STUDENT LIFE

FROM: BOB FRANCISCO, DIRECTOR OF STUDENT LIFE

SUBJECT: CHANGES TO RATES FOR B.O.T. APPROVAL

DATE: AUGUST 24, 1994

The rates that have been negotiated for the 1994-95 academic year for the board plan are as follows:

"DIAMOND"	19 Meal Plan	$1945 Per Year
"QUARTZ"	12 Meal Flex Plan	$1935 Per Year
"GRANITE"	15 Meal Plan	$1865 Per Year
"AGATE"	10 Meal Plan	$1785 Per Year

In response to tenant concerns over the increase in monthly rates for Prospector Village rentals, we have settled on the following monthly rates effective September 1, 1994 - June 30, 1995:

1 BEDROOM	$350 Per Month
2 BEDROOM	$385 Per Month
3 BEDROOM	$425 Per Month

(Please see attached for further details)

Also with this memo, I am proposing that effective January 1, 1995 all new Prospector Village tenants will have a $400 deposit on account for damages (which has been increased from $150). This increase should alleviate the problem of damages that exceed our current deposit amount and save collection costs when the deposit doesn't cover damages.

If you need any further information please do not hesitate to ask.

cc: Linda Diets

COLORADO SCHOOL OF MINES
Interdepartmental Communication

FILE

To: Prospector Village Residents

From: Bob Francisco, Student Life

Re: Rent Date: August 10, 1994

At the conclusion of the tenant meeting on Saturday, August 6, 1994, it was decided to decrease the rent per unit in Prospector Village due to the hardship this has caused voiced by the tenants who attended. The rent schedule appears below that will be in effect for September 1994 - June 1995.

As stated at the meeting, this decrease will mean that I now have to find approximately $14,000 worth of expenses to cut that were previously budgeted. Although we will try very hard not to decrease services, some services may take longer due to this most recent decision.

It was also noted that an 8-9% increase will be inevitable for the 95-96 school year. Notification will be mailed by May 1, 1995.

I thank you, as residents, for sharing the concerns that you had and I will be checking on the items as discussed at the meeting.

Good luck with the upcoming academic year.

1 bedroom apartment - $350/month Sept. - June
2 bedroom apartment - $385/month Sept.- June
3 bedroom apartment - $425/month Sept. - June

Your student account will be changed to reflect the charges above effective September 1, 1994.

BF/sjg

Myth

STUDENTS CAN GET BETTER MEALS AT A LOWER COST OFF-CAMPUS OR COOKING FOR THEMSELVES.

Truth

WHEN IT COMES TO TASTE, VARIETY, FLEXIBILITY, NUTRITION, CONVENIENCE AND COST, THE MEAL PLAN CAN'T BE BEAT.

Welcome to the Colorado School of Mines Dining Program

Designed with the CSM student in mind, here's a flexible meal plan that gives today's student access to the dining service of the 90's - easy to use, more service hours and better choices featuring the finest quality foods and services.

The Dining Plans

The **Diamond Plan** provides all of the 19 *all you can eat* meals that the "Caf" serves each week. If you would like the convenience and the peace of mind of having all of your weekly meals provided, this plan is for you. $972.50 per semester.

The **Quartz Plan** provides you the option of eating any 12 meals of the 19 meals offered each week in the "Caf's" unlimited dining service and $150 in Flex-Dollars for those other meal options. If you are always on the go and spend some time away from campus, this plan is for you. $967.50 per semester.

The **Granite Plan** provides you the option of eating any 15 meals of the 19 meals offered each week. The "Caf" features your favorites each day for unlimited dining. A perfect plan for those students who have little time for breakfast or who are off campus for the weekend. $932.50 per semester.

The **Agate Plan** provides you the option of eating any 10 meals of the 19 meals offered each week. This is a convenient plan for students who are busy with off campus activities or plan to be away from campus frequently. $892.50 per semester.

It is mandatory that students residing in the Residence Halls purchase one of the meal plans. All other students are also encouraged to participate in a meal plan. Your CSM meal plan card is encoded to access your dining service account. A meal (or dollar amount with the Flex-plan) will automatically be deducted from your account when presented to the cashier. The cashier can also tell you your current balance of meals or credit.

The Caf

Unlimited Dining Program for the Colorado School of Mines Community.

- Freshly made pasta with homemade sauces
- 30 item salad bar
- Deli line with variety of meats and cheeses
- Mexican and Wokery Bars
- Selection of freshly made desserts
- Cereal Bar, assorted breads
- Freshly prepared soups and Chili
- Soft serve ice cream
- Belgium Waffle Bar
- Wide variety of beverages
- Monthly theme buffets
- Premium Nights
- Weekly special items

The I-Club

A favorite spot for casual dining -

- Delicious grilled Sandwiches and burgers
- Avanti - flavored and premium coffee
- Mrs. Fields muffins, croissants and cookies
- Dunkin Donuts
- Ben & Jerry's Premium Ice Cream
- Easy Goes - grab & go items
- Deli Corner - Freshly made sandwiches & subs
- Itza Pizza - eat in or delivered
- Big Screen TV

Oredigger Meal Plan

If you're on campus more than twice a week, love unlimited seconds and are tired of a brown-bag lunch this plan is for you. For under $3.00 a day, you can enjoy a hot, healthy lunch in the "Caf" in the Ben Parker Student Center.

The Oredigger Meal Plan allows you all the unlimited dining that is featured daily in the "Caf". This meal plan is offered for lunches only, Monday thru Friday for the entire semester.

This plan is available only to off-campus students, faculty and staff.

$260.00 per semester

The "Caf's" Hours of Operation:

Monday - Friday	
Hot Breakfast	7:15am - 8:30am
Continental Breakfast	8:30am - 10:00am
Lunch	11:15am - 1:15pm
Dinner	5:00pm - 7:00pm
Saturday & Sunday	
Brunch	11:30am - 12:30pm
Dinner	5:00pm - 6:00pm

I-Club Hours:

Monday - Thursday	
	7:15am - 8:00pm
Friday	
	7:15 am - 4:00pm
Saturday & Sunday	
	Closed

Sign up for Meal Plans in the Campus Dining Office located in the Ben Parker Student Center. Or Call 273-3358 for more information.

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number I (c)
Presented by Deits

Subject:

Revision to the 1994-95 Budget

Background Information:

The Board of Trustees approved the Budget for Fiscal Year 1994-95 on May 5, 1994. The fringe benefit rates used in the budget were 24.47 percent for faculty and 21.72 percent for classified. We are in the process of implementing a Human Resources System (HRS) which integrates with the Financial Records System and Student Information System. The HRS system structure supports a fringe benefit rate with only one decimal point. Consequently, we are requesting your approval of the following rates:

Faculty	24.5 percent
Classified	21.7 percent.

Action Motion Requested:

Motion to approve.

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CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number I-d
Presented by Ansell

Subject: Bank (Corporate Resolution)

Background Information:

Please see the enclosed material.

Action Motion Requested:

Request motion to approve Corporate Resolution

Safe Deposit Box #6013

CORPORATE RESOLUTION

The undersigned Secretary/Assistant Secretary of Colorado School of Mines
Golden CO 80401
("Company"), a corporation duly organized and existing under the laws of the State of Colorado,
hereby certifies that, at a meeting of the Board of Directors of the Company duly called and held at Colorado School of Mines, City of Golden,
County of Jefferson, State of Colorado on September 9, 1994,
at which meeting a quorum was continuously present, the following resolutions were adopted, have been duly entered into the minute book of the Company, are in conformity with (as applicable) the Articles of Incorporation/Charter and By-Laws, are now in full force and effect, and have not been modified or rescinded in any manner:

RESOLVED, that any_____(_____) of the following persons:

- [X] President
- [ ] any Vice President
- [ ] any Assistant Vice President
- [X] Treasurer
- [X] any Assistant Treasurer
- [ ] Secretary
- [ ] any Assistant Secretary
- [ ] Other: _____ (Title)

("Authorized Party") is authorized and empowered to perform any one or more of the following actions for and on behalf of the Company and on such terms and conditions as such Authorized Party may deem advisable in his sole discretion:

(a) Open and maintain any safe deposit boxes, lockboxes and escrow, savings, checking, depository, or other accounts with _____ ("Bank");

(b) Assign, negotiate, endorse and deposit in and to such boxes and accounts any checks, drafts, notes, and other instruments and funds payable to or belonging to the Company;

(c) Withdraw any funds or draw, sign and deliver in the name of the Company any check or draft against funds of the Company in such boxes or accounts;

(d) Implement additional depository and funds transfer services (including, but not limited to, facsimile signature authorizations, wire transfer agreements, night depository agreements, automated clearinghouse agreements, and payroll deposit programs);

(e) Endorse to Bank any checks, drafts, notes, or other instruments payable to the Company;

(f) Appoint the Bank as the Company's attorney-in-fact for any purpose (including, but not limited to, endorsing any checks, drafts, notes or other instruments payable to the Company);

(g) Execute any document (including, but not limited to, facsimile signature authorization agreements, wire transfer agreements, automated clearinghouse agreements, payroll deposit agreements, powers of attorney, and waivers) and take any action on behalf of the Company to carry out the terms of each of the documents set forth herein and to carry out these resolutions; and

(h) Designate from time to time the person or persons to receive from the Bank any and all cancelled checks and/or statements of account.

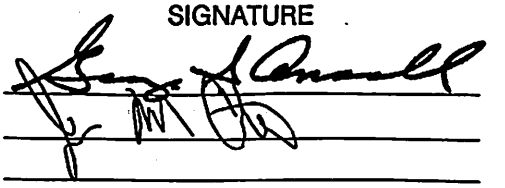
FURTHER RESOLVED, that endorsement of items for deposit may be by the written or stamped endorsement of the Company without designating the person making the endorsement;

FURTHER RESOLVED, that any of the foregoing or related activities taken by any Authorized Party prior to the adoption of the preceding resolutions are hereby ratified and declared to be binding obligations of the Company in a full and complete manner;

FURTHER RESOLVED, that the authority and power of any Authorized Party as provided in the preceding resolutions will continue in full force and effect until the Board of Directors or shareholders of the Company adopt a resolution amending, modifying or revoking one or more of the preceding resolutions and a certified copy of the properly executed resolution is actually received by the Bank; and

FURTHER RESOLVED, that the Secretary or any Assistant Secretary of the Company is authorized from time to time to certify the adoption of the foregoing resolutions to the Bank, the continuing effect of these resolutions, and the incumbency of the various parties authorized to exercise the rights in these resolutions.

The undersigned Secretary/Assistant Secretary certifies that the following persons are duly elected officers or otherwise authorized to act on behalf of the Company in the capacities set forth below and that the following original signatures are genuine in all respects:

NAME	TITLE	SIGNATURE
George S Ansell	President	
James Carter	Controller	

☐ If checked, the undersigned Secretary/Assistant Secretary certifies that shareholder approval of this Resolution is not required under (as applicable) the Articles of Incorporation/Charter and Bylaws of the Company.

Dated this _____ day of _____.

[SEAL]

_____
Secretary/Assistant Secretary

Certificate of Shareholder Approval

The undersigned Secretary/Assistant Secretary of the Company hereby certifies that, at a meeting of the shareholders of the Company duly-called and held at _____ City of _____, County of _____, State of _____, on _____, at which meeting a quorum was continuously present, _____% or more of the shareholders of the Company approved the preceding resolutions of the Board of Directors of the Company and that such approval has not been modified or rescinded in any manner.

Dated this _____ day of _____.

[SEAL]

_____
Secretary/Assistant Secretary

Certificate of Shareholder Approval
By Unanimous Consent

The undersigned Secretary/Assistant Secretary of the Company hereby certifies that pursuant to a unanimous written consent of all shareholders of the Company, all of the shareholders of the Company approved the preceding resolutions of the Board of Directors of the Company and that such approval has not been modified or rescinded in any manner.

Dated this _____ day of _____.

[SEAL]

_____
Secretary/Assistant Secretary

(If Shareholder Approval Is Required, One Certificate of Approval Must Be Completed)

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number I-e
Presented by Schowengerdt

Subject: Academic Initiatives Report

Background Information:

We are required to submit an Academic Initiatives Report to CCHE every year. Attached you will find the report which must be submitted this fall.

Action Motion Requested:

Request motion for approval.

COLORADO SCHOOL OF MINES

ACADEMIC INITIATIVES REPORT

for the period
1995-1998
- September 9, 1994 -

I. INTRODUCTION

This is the Academic Initiatives Report for the Colorado School of Mines for the 1994-95 academic year. Additional planning information is given for the fiscal year 1995-96 and for two years thereafter. This report is the result of the continuing academic planning process that began at Mines in the spring of 1990. That process is guided by the Academic Planning Council, which is composed of faculty and department heads and is chaired by the Vice President for Academic Affairs. The principal output of that group was the CSM Academic Plan, which is the planning framework for the School and is updated annually, concurrent with the CCHE academic planning process.

The Academic Plan was described in some detail in the 1991 report. The overall goal of the plan is education for the stewardship of the earth and its resources. The plan delineates areas for quality growth, priority areas for strengthening, and opportunities for world leadership. It also identifies areas of the School's infrastructure that need to be made healthier and defines a number of issues for further study. The plan also contains individual departmental objectives that complement the institutional academic goals. The following sections describe specific implementation measures taken and planned in conjunction with the Academic Plan.

II. PLANNING OBJECTIVES

A. FISCAL YEAR 1995-96

Last year's report detailed major initiatives to be implemented this year and in subsequent years over a three-year period. Each of these initiatives was designed to further one or more objectives of the Academic Plan in the growth areas (environment and materials), the priority areas for strengthening (engineering and applied computer sciences) and leadership (quality education, exploration, extraction and production and fuels and energy). Because of their urgency, the new academic programs listed in previous years' reports were targeted primarily in the growth and strengthening areas.

The following is an update on the academic initiatives listed in last year's report, including initiatives to be implemented next fiscal year.

1. Major Academic, Research, and Public Service Initiatives

The following new degree programs were proposed in the Academic Plan:

a) M.S. and Ph.D. in Environmental Science and Engineering. These new programs were approved by the CSM Faculty Senate and Board of Trustees in the spring of 1992 and submitted to the CCHE in June of that year. They were approved by the Commission at their meeting in July, 1992. The old M.S. titles were dropped with approval of CCHE staff and the students currently in the M.S. programs were transferred into the new M.S. Environmental Science and Engineering degree program. The first new students were admitted to the Ph.D. program in the fall of 1992. These have been the fastest growing graduate programs on campus and are now the largest.

b) M.S., M.E. and Ph.D. in Engineering Systems. These programs extend to the graduate level the unique Mines' concept of an interdisciplinary engineering degree combining civil, electrical and mechanical, as applied to the stewardship of the earth and its resources. The undergraduate engineering program is the largest undergraduate program on campus, enrolling over 800 students. These students are in great demand in industry and graduate schools. We believe that there is similar demand for advanced degrees built upon the interdisciplinary model. The proposal for graduate programs in Engineering Systems was completed during the 1992-93 academic year, receiving unanimous approval in the School's Graduate Council, Faculty Senate and Board of Trustees. The proposal was submitted to CCHE in September of 1993, with the support of both CU and CSU. The Commission approved the program in the spring of 1994 and the first students are enrolled in the program this fall.

c) B.S. in Economics. A major tenet of the Academic Plan is that education in the responsible stewardship of the earth and its resources cannot be divorced from the subject of economics. Accordingly, CSM submitted a proposal to offer an undergraduate degree in this area. This degree is built upon the Mines Core and compares favorably with quantitative B.S. degrees in economics offered by such institutions as MIT. The proposal received extensive discussion on campus during the 1992-93 academic year and was approved unanimously by the School's Undergraduate Council, Faculty Senate and Board of Trustees. It was submitted to CCHE in September of 1993. This program had the support of CU, CSU and UNC. The Commission approved the degree in the spring of 1994 and the first students are enrolled in the program this fall.

d) M.S. and Ph.D. Degrees in Excavation Engineering. A proposal to institute these degrees was submitted to CCHE staff in June of 1992. After receiving the comments from the consultants, the proposal was withdrawn. We have decided not to resubmit this proposal, but instead to direct students interested in this field into either the existing graduate programs in Mining Engineering or into the new graduate programs in Engineering Systems. We are therefore deleting this program and will no longer list it in these Academic Initiative Reports.

The Colorado School of Mines has just embarked on a major study and revision of its undergraduate curriculum. Over the past academic year, six study committees have examined every aspect of our undergraduate curriculum, including the core, math and basic sciences, humanities and social sciences, EPICS, engineering science, and engineering design. The results of this study have been reported to the Board of Trustees at their annual summer conference and to the Annual Faculty Conference. The conclusions drawn from both of these conferences is that the institution should continue to move forward with a revision of its undergraduate curriculum. While the nature of the revision is still to be determined by the faculty, there was general agreement that we need to provide our students with increased career flexibility for the 21st century and that we need to do a better job of preparing them, not only to cope with the global challenges confronting society in the next century, but to shape that society. It is widely recognized throughout engineering education circles in the U.S. that such a role is new and somewhat foreign to engineers and applied scientists. However, many at CSM and elsewhere believe that it is a role with which engineers must become increasingly comfortable, and in which they must increasingly participate, if we are to solve the twin crises of resource depletion and environmental protection.

At this time we are not prepared to specify what new degree programs might emerge as a result of the current curriculum revision activities, but we must anticipate the possibility. There have been many discussions of new degree programs in business, management, international studies, and aspects of the humanities and social sciences bearing on our role and mission, at both the undergraduate and graduate levels. Other possibilities will undoubtedly arise as the process goes forward. We expect to provide more details in next year's Academic Initiatives Report.

The School has also developed a research plan to guide our activities for the next 5 to 10 years. The major research initiatives for this planning period are updated below.

a) Colorado Institute for Fuels and High-Altitude Engine Research (CIFER) This institute has recently been designated as the EPA High Altitude Research Center for the nation. The institute is funded by EPA , DOE, RTD, Colorado Dept. of Health and Public Service. It engages in research on alternative fuels and internal combustion engines to reduce emissions at Denver's altitude.

b) Colorado Institute for Groundwater Research. The principal component of this institute at the present time is the International Groundwater Modeling Center, funded by EPA. We are presently expanding these activities with funding from IBM through the Center for Geoscience Computing. The need for research in this area in the Rocky Mountain region is great and growing rapidly.

c) Colorado Center for Advanced Ceramics (CCAC). This center has recently received new funding from NSF and NASA. It has had major sustaining support from Coors Ceramics for several years. We plan to expand industry involvement in this center with a possible application to NSF as an Industry-University Cooperative Research Center.

d) Institute for Research in Environmental Geosciences (IREG). With funding totaling $5.5 million from IBM, the Keck Foundation, the Amoco Foundation and the Mobil Foundation, this institute has great potential. It is also pursuing designation as an Industry-University Cooperative Research Center.

e) The Environmental Institute at Rocky Flats. This institute has just been formed with funding from DOE Rocky Flats. CSM is the lead institution in a consortium of Colorado universities in this initiative, which is directed toward development of environmental remediation technologies to be implemented at Rocky Flats and which could grow to a funding range of $3-$5 million over the next few years.

f) Center for Solar and Electronic Materials. This center is in the planning stages, with funding expected from NSF and NREL. Industrial partners are expected to be Golden Photon, Colorado Public Service and Lockheed Martin.

g) Materials Modeling Center. The goals of this center, which is currently in the planning stages, will be to minimize the generation of often hazardous waste products in the processing of materials. This center represents an important linking of our environmental and materials growth areas.

h) Colorado Institute for Vehicular Fuel Cells. This initiative is planned around our departments of chemical engineering, engineering and chemistry and will be devoted to research into fuel cells for powering automobiles and farm tractors. Funding will be sought from NREL and DOE, with industrial partners from across Colorado.

In the public service arena, we have made major moves to increase in our outreach activities. Continuing education activities have grown dramatically at CSM during recent years. Many of these activities are in the area of industry outreach. Initiatives include training at DOE Rocky Flats and a new DOE Academy for the Rocky Mountain Region. With the recent deregulation of Extended Studies by the CCHE, there is now greater financial incentive to introduce new programs and to expand our sphere of operations. We are also a full participant in the Statewide Systemic Initiative and are partnered with the Jefferson County School District. We will continue to expand our K-12 programs, our industrial outreach, and our evening programs.

2. Program Changes (New or Discontinued).

As discussed above, the M.S., M.E. and Ph.D. degrees in Engineering Systems and the B.S. degree in Economics are being implemented this year following approval by the CCHE. In conjunction with the approval of the engineering systems degrees, the M.S. in Applied Mechanics is being discontinued.

3. Changes in Enrollment Totals, Level or Mix.

CSM continues to have the largest and most highly qualified entering classes in its 120-year history. While the total enrollment continues to increase, the mix has changed dramatically toward graduate education over the last few years. Almost a third of the total student body is now composed of graduate students. At the undergraduate level, the mix favors the more non-traditional (for CSM) majors in engineering and chemical engineering, coupled with increasing interest in environmental minors. At the graduate level, the traditional options are quite strong, with geology and geophysics following closely behind environmental science and engineering in total numbers of students. Projected FTE enrollments are shown in the following table:

Projected Enrollment
FTE Students

	1995-96	1996-97	1997-98	1998-99	1999-2000
CSM	3010	3040	3055	3065	3065

The institution is operating under a self-imposed target enrollment of 3000 FTE students. As the figures above show, we will probably exceed that target by one or two percent over the next five years. CSM will manage its enrollment as close to the target as possible, continuing to improve the quality of the student body, increasing the proportions of women and minorities, while at the same time sustaining and improving the quality of the education offered to all our students. The enrollment picture at Mines is presently stronger than at any time in our 120-year history.

B. FISCAL YEARS 1997-98

Depending on the outcome of the statewide enrollment planning exercise which is currently underway, CSM plans to maintain its overall enrollment nearly constant through the remainder of the planning period, as discussed earlier. While it is possible that new degree programs will emerge in the curriculum revision process, such programs will not be proposed as a way of increasing our enrollment, but rather as a means of further stabilizing it and positioning the institution to carry out its role and mission in the context the global challenges of the 21st century. This was the guiding philosophy for the degrees in environmental science and engineering, engineering systems, and economics, and it will remain so in any future considerations of new degree programs.

III. APPENDIX

1. Role and Mission

a. Statutory Statement (Colorado Revised Statutes, 1986, 23-41-105)

> The Colorado School of Mines shall be a specialized baccalaureate and graduate research institution with high admission standards. The Colorado School of Mines shall have a unique mission in energy, mineral, and materials science and engineering and associated engineering and science fields. The school shall be the primary institution of higher education offering energy, mineral, and materials science and mineral engineering degrees at both the graduate and undergraduate levels.

b. Defining Characteristics for Current Role & Scope

> The Colorado School of Mines is dedicated to education and research in all areas of science and engineering and associated fields related to the discovery, production, and utilization of resources needed to improve the quality of life of the world's inhabitants. CSM is committed to educating students to become good stewards of the earth and its resources. It is committed to the mitigation of environmental damage caused by the production and utilization of minerals, energy, and materials, and to the development of processes that will minimize such damage in the future. It is further committed to the development of technologies that can reduce the world's dependence on non-renewable resources.

The State's goals, objectives, and priorities in the Statewide Master Plan are guiding how we execute our role and mission in all eight of the areas outlined in the plan. The relationships between CSM's recent achievements and the Master Plan are summarized in what follows:

Goal 1: *To assist Coloradans in becoming citizens of our nation and the world by providing access to educational opportunities of the highest quality.* By decision of the Board of Trustees, CSM follows a need-blind admissions policy. The amount currently budgeted in our general fund for financial aid is approximately 20% ($2.5 million) of our State General Fund allocation. In addition, we spend another $4 million from restricted funds for financial aid. CSM has just completed Resources: The Campaign for CSM, having raised $72.4 million. These funds are targeted for faculty chairs, student financial aid and a multitude of needs above the state's contribution. These facts, coupled with the fact that CSM has the highest admission standards of any public university in Colorado, means that we are contributing significantly to this statewide goal of access to quality higher education.

Goal 2: *To provide equal access for those who have historically been underserved by higher education, including native Americans, Hispanic-Americans, African-Americans, and Asian-Americans.* CSM has met or exceeded its affirmative action goals every year since the CCHE first established them in 1991. We are on track to achieve our goal of having 18.6% of our graduating seniors be minorities by the year 2000. Minorities comprise 18% of the new students for the fall of 1994, an all-time high for the institution, and retention rates for minorities are higher than for non-minorities.

Goal 3: *To sustain excellence in undergraduate and occupational education.* CSM built its reputation on its undergraduate programs and is sustaining the excellence upon which that reputation was founded. Our placement statistics are among the strongest in Colorado institutions of higher education.

Goal 4: *To maintain the quality of graduate and research programs and to enable their continuing contribution to the economic future of the state.* CSM has developed quality graduate and research programs in all the fields falling within our role and mission. Our traditional areas of mining, metallurgy, petroleum, geology and geophysics are well known and highly respected throughout the world. Our growth areas of environment and materials are the among the strongest such programs in Colorado.

Goal 5: *To continue to improve effectiveness, efficiency, and productivity in every area of higher education in wise stewardship of the state's resources.* CSM fared very well in the recent faculty productivity study done by the CCHE. Administrative costs are also quite low on a national scale.

Goal 6: *To strengthen higher education's accountability to the citizens of Colorado by continuing to implement meaningful programs of assessment.* CSM's assessment program has received accolades from across the country and was rated "one of the best in the State" by the CCHE staff.

Goal 7: *To link higher education more closely to the communities it serves by fostering partnerships among institutions of higher education, the state, the business community, and the students.* CSM has a long tradition of working with business and industry in student and research projects. Most notable among these in recent years has been the cliented EPICS projects.

Goal 8: *To join with the K-12 education system to articulate clear expectations of entering students in order to promote their academic performance, success, and retention in Colorado's universities and colleges.* CSM has the largest content-based math and science program in the state for in-service education of K-12 teachers. We have many programs in place, such as the Minority Engineering Program, to help improve retention rates.

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number I-f
Presented by Dr. Schowengerdt

Subject: Existing Program Review Report

Background Information:

We are required to submit an Existing Program Review Report to CCHE every year. Attached you will find the report which must be submitted this fall.

Action Motion Requested:

Request motion for approval.

COLORADO SCHOOL OF MINES

EXISTING PROGRAM REVIEW
ANNUAL SUMMARY REPORT

September 9, 1994

INTRODUCTION

This is the report of existing program reviews conducted during the 1993-94 academic year at the Colorado School of Mines. The reviews were scheduled and conducted in accordance with the CSM Existing Program Review Policy, which was approved by the CCHE on March 30, 1989. The policy assures that every academic program at the School is reviewed on a rotating basis in a timeframe not to exceed six years. This timeframe is commensurate with scheduled reviews by the Accreditation Board for Engineering and Technology (ABET) and with visits by our departmental visiting committees. Visiting committees for Metallurgical and Materials Engineering, Mineral Economics, Physics, and Petroleum Engineering have made visits recently. A table showing the status of the program reviews and visiting committee visits is attached to this report. As can be seen in that table, we had scheduled the programs in Metallurgical and Materials Engineering and in Physics for review in this report.

In addition to the visits by the committees, the North Central Association visited the campus in the fall of 1992 and the Accreditation Board for Engineering and Technology (ABET) is scheduled for their six-year visit to our eight accredited programs in November of this year.

Since the response to the Petroleum Engineering Visiting Committee Report is not complete at this writing, we will wait until next year to review those programs and report to the CCHE. Because we have just established a new B.S. in Economics, we will wait until we have had a few years experience with that program before reviewing and reporting. As indicated in the attached table, current plans are to do the review in 1996. We presently plan to include a review of the programs in Environmental Science and Engineering in next year's report also. Any of these plans could be affected by the schedules of the visiting committee visits as well as other unforeseen events.

The remainder of this report contains descriptions of the current status of the programs in the two departments reviewed this year, Metallurgical and Materials Engineering and Physics, including comments by the visiting committees.

METALLURGICAL AND MATERIALS ENGINEERING PROGRAMS

The Department of Metallurgical and Materials Engineering offers programs leading to the B.S., M.S. and Ph.D. degrees in Metallurgical and Materials Engineering. Enrollment trends for the past 5 years are shown in Fig. 1.

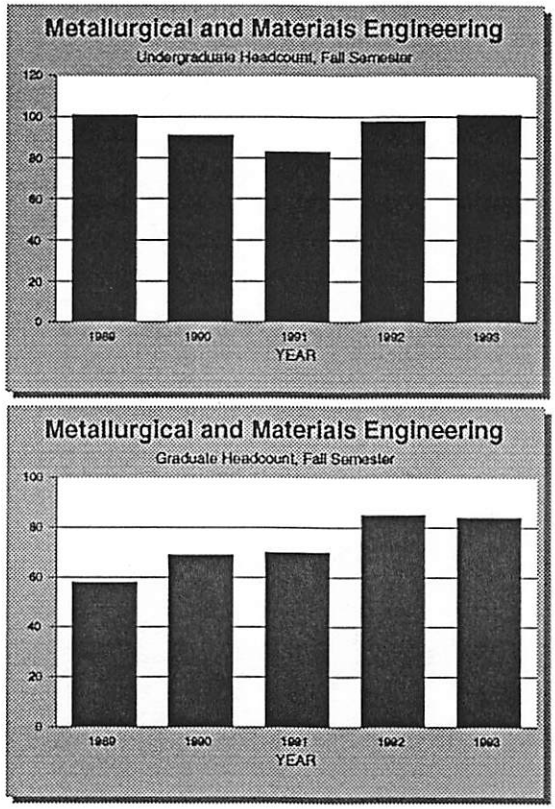


Fig. 1. Enrollment Trends in Metallurgical and Materials Engineering.

As is evident in Fig. 1, undergraduate enrollments have increased in the last two years, fully recovering their losses since 1989. Graduate enrollments have shown a steady rise since 1989, broken only by a slight dip this past year. This dip is due to more students selecting the Materials Science option. It is no cause for alarm; the graduate programs in metallurgical and materials engineering represent the third largest graduate programs on campus.

The following numbers of students graduated from these programs over the 5-year period 1989-93 (data from 1994 ABET Review Submission, Vol.I):

Degree Title	Number Conferred
B.S. Metallurgical and Materials Engineering	109
M.S. Metallurgical and Materials Engineering	85
Ph.D. Metallurgical and Materials Engineering	35

All of these programs were reviewed last year in conjunction with the visit of the departmental visiting committee. A listing of the visiting committee members is

attached. The committee consisted of some of the leading professionals in the world in the field of metallurgical and materials engineering.

The visiting committee's report was highly complimentary of the department and its programs. The committee listed the following strengths of the department: accessibility of the professors; quality of teaching; the fact that professors and not TA's do the teaching; rigorous technical content; processing emphasis; and availability of good equipment. They remarked that a comparable metallurgical and materials engineering program does not exist elsewhere.

The conclusion of the review of these programs is that they are all healthy and are among the top such programs in the United States.

The department has recently hired a new assistant professor in ceramics. Future plans for the programs include continued development of the ceramics and advanced materials areas, strengthening of the polymeric materials efforts, and the renovation and expansion of Hill Hall. No changes are planned in the mix of degree offerings.

PHYSICS PROGRAMS

The department offers the degrees B.S. in Engineering Physics, M.S. in Physics, and Ph.D. in Applied Physics. Enrollment trends over the last 5 years are shown in Fig. 2.

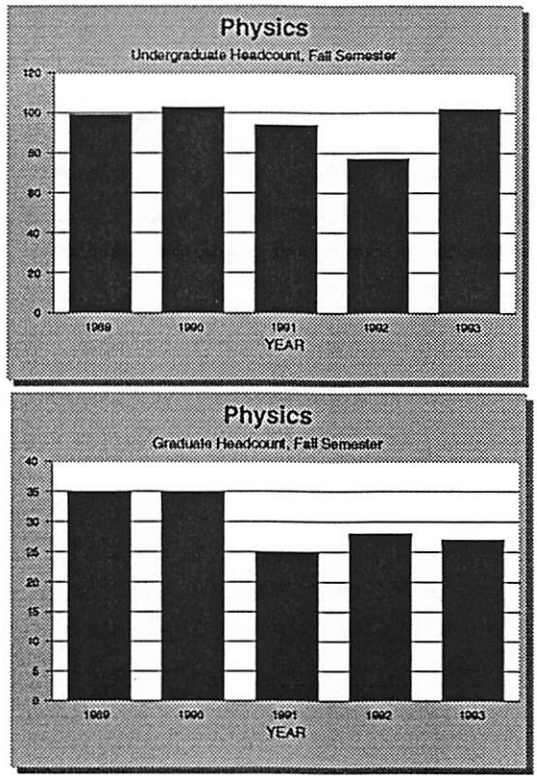


Figure 2. Enrollment Trends in Physics.

The trends in the undergraduate enrollments shown in Fig. 2 represent an apparent one-time dip from which the numbers have now recovered. We do not know the cause of this dip, but we have seen such cyclical behavior in this program before. The trends at the graduate levels are more significant and are most likely caused by students opting for the Materials Science degrees, where employment prospects have been somewhat better in recent years. Since the department participates in this interdisciplinary program, the activities of the faculty have not decreased but have simply shifted to the new program.

The 5-year graduation totals are shown in the following table (from 1994 ABET submission, Vol. I):

Degree	Number Conferred
B.S. Engineering Physics	60
M.S. Physics	17
Ph.D. Applied Physics	12

The graduation numbers given above indicate that the programs in Physics are basically healthy. Physics programs around the country do not typically graduate large numbers of students. Those at Mines are among the largest of the applied programs and our B.S. degree in engineering physics is one of only eleven physics degrees in the country which are accredited by ABET.

All of the physics programs were reviewed in conjunction with the recent visit of the departmental visiting committee. The membership list of this committee is attached. The list contains highly respected individuals in the fields of physics and engineering from both industry and academe. The visiting committee commented on curricular issues, in particular that the School-wide core needed more elementary physics, efforts made by the faculty to improve the retention rate in the elementary physics courses, the breadth of research activities needed in the department, and graduate student issues. Overall, the visiting committee was positive on the physics programs.

The conclusion of the review of the physics programs is that they are strong in terms of quality and, given the current employment environment for physicists, they are healthy in terms of enrollment.

The department has recently hired a professor in the area of solar and electronic materials. Future plans in the department include the establishment of a center for solar and electronic materials and continued improvement in the lower-division course offerings. No changes are planned in degree offerings.

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number I-G
Presented by Dr. Schowengerdt

Subject: Name Change for Department of Mineral Economics

Background Information:

The Department of Mineral Economics has asked that the name of the department to the Division of Economics and Business. Background information is attached.

Action Motion Requested:

Request motion for approval.

COLORADO SCHOOL OF MINES
Vice President for Academic Affairs and Dean of Faculty

INTERDEPARTMENTAL MEMO

TO: President Ansell
FROM: Frank Schowengerdt
SUBJ: Name Change for Department of Mineral Economics
DATE: 8/24/94

In response to a request from the department, I recommend that the name of the Department of Mineral Economics be changed to the Division of Economics and Business. The new name more accurately reflects the interdisciplinary nature of current and planned programs and the breadth of courses offered. The change will make it easier to recruit undergraduate majors for the new B.S. degree in economics. I recommend that this name change be presented to the Board of Trustees at their meeting on September 9th, 1994. John Tilton has indicated that he will be pleased to attend that meeting if it would be helpful.

Copy:

John Tilton

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number I-h
Presented by Dr. Schowengerdt

Subject: Visiting Committee Report Responses

Background Information:

Response letters to the reports from the Petroleum Engineering and Metallurgical and Materials Engineering visiting committees are attached along with copies of the reports from those committees.

Action Motion Requested:

Request motion for approval

COLORADO SCHOOL OF MINES

1500 Illinois Street
Golden, CO 80401-1887
303/273-3280
303/273-3040 (FAX)

Board of Trustees

September 9, 1994

S.D. Chesebro'
President and CEO
Tenneco Gas
1010 Milam St.
P.O. Box 2511
Houston, TX 77252-2511

Dear Steve:

Thank you for your insightful report, dated June 16, 1994, of the visit of the Petroleum Engineering Visiting Committee to the department on December 14-15, 1993. Your report has been read by the departmental faculty, the administration and the board. We offer the following comments in response.

We are pleased that the committee saw progress in implementing recommendations made in early 1992. We believe that the department has made progress in broadening its research interests and developing funded research programs to complement its already outstanding undergraduate program. We share your enthusiasm for the first-rate new facilities which the faculty and students now enjoy and we hope that this investment in infrastructure will lead the department to a new level of prominence.

The committee wisely chose to focus on funding during this visit. As we discussed when you were here, funding for the departments at CSM is a complex issue involving many sources of revenue and many internal and external constraints. One of the most important and controversial decisions involves the deployment of personnel, as is the case in any organization. Based on the guidelines used by the administration for all of the departments, Petroleum Engineering currently has an appropriate number of faculty given the number of students in the department. While both of these numbers have decreased dramatically over the past ten years, the balance meets the guidelines. We realize, however, that this does not change the fact that a critical minimum has been reached and the faculty feel overworked. The administration will review the distribution of faculty positions across the campus with the department heads this month and make a decision on whether to hire in Petroleum Engineering by the end of September.

Thank you again for your visit and report. We value greatly the interest and dedication shown by the committee.

Sincerely,

Donald E. Miller

REPORT TO THE PRESIDENT
COLORADO SCHOOL OF MINES

FROM THE EXTERNAL VISITING COMMITTEE
PETROLEUM ENGINEERING DEPARTMENT

During the 2-day meeting of the Committee on December 14-15, 1993, we held extensive discussions with Dr. van Kirk and other faculty. We looked at the excellent new facilities in Alderson Hall, and we held a private meeting with interested students, both undergraduate and graduate. Details of this information exchange are contained in the attached minutes.

The Committee is pleased to see progress in implementing the recommendations we made in early 1992.

Funding was the major focus of this year's Committee meeting. We found that need for additional faculty is the most serious concern facing the PE Department at this time. The loss of 4 faculty over the past several years through retirements and resignations has been a significant change in the staffing of the Department. We believe that ABET accreditation for the PE Department could be at risk, given the current level of faculty devoted to undergraduate teaching. Our discussions with students reinforce this view; they have noticed a reduction in time available by faculty for students.

We believe that one, possibly two, additional faculty are needed now in the PE Department. We believe the School and the Department must do whatever is necessary to reduce the risk of non-accreditation by ABET. Obviously, improved funding would help solve this problem.

Although we recognize the need for additional funds to equip the new facilities in Alderson Hall, we believe further discussion with the Department and the School is needed to define the best strategy to raise such funds. At the moment, the Visiting Committee has no commitment nor plan to undertake a fund-raising program among alumni and/or industry.

COLORADO SCHOOL OF MINES

1500 Illinois Street
Golden, CO 80401-1887
303/273-3280
303/273-3040 (FAX)

Board of Trustees

September 9, 1994

Dr. I.M. Bernstein
Vice President for Arts, Sciences, and Technology
Tufts University
Medford, MA 02155

Dear Mel:

Thank you for the report dated June 1, 1994 of your visit to the Department of Metallurgical and Materials Engineering in February. We appreciate the thoroughness with which you reviewed the department and your many observations and recommendations. This response incorporates input from both the faculty and the administration.

The Board of Trustees was very pleased to read about the departmental and institutional strengths as presented in your report. At the same time, we were somewhat surprised to learn that the undergraduates in the department had little interest in broadening their education with respect to more liberal arts courses. The School is currently undergoing a comprehensive review of its undergraduate curriculum. At a recent Board retreat there was a clear mandate expressed for such a review and considerable support for major change. In this context, your observations about EPICS, liberal arts requirements, CSM101, the field sessions, the co-op program and technical course diversity are timely and of great interest to us. They will be given serious consideration as we move forward with the curriculum review and revision process.

We remain concerned about the state of mineral processing and extractive metallurgy as a viable sub-discipline at Mines. We have reached agreement with Hazen Research for shared funding of a position in this area, which we hope to fill this academic year. We are determined not to allow this area to disappear as a choice for our students and we will continue our efforts to educate them on the value of the field, especially as it relates to environmental remediation.

We agree that more possibilities for minors in engineering and business are needed. With the recent approval of graduate degrees in engineering systems and an undergraduate degree in economics, we should soon have the capability on campus to offer such minors. We also agree with you that more effort needs to be expended to help students differentiate between the materials engineering and materials science programs. Much of the confusion is due to the transitional nature of the latter and we are confident that as each program matures, students will become more familiar with what is required and the differences between the programs. We agree that more needs to be done to improve computing and library facilities. We have increased general fund allocations to each of these areas by over 10% this year. We are in the process of upgrading the campus network, wiring the dorms, providing compatible email capabilities in all the departments, adding monographs to the collections, improving on-line access to periodicals and, in general, bringing computing and information resources into a closer working relationship.

We are quite pleased to hear the Visiting Committee's opinion that the sensitivity and balance between the undergraduate and graduate programs in the department is impressive. The faculty agree that there needs to be a continuing review on

the efficacy of sustaining the current graduate population and research volume, but they are quite naturally reluctant to forego new research opportunities. This kind of approach to their jobs over the years is what has given the department the stature it now enjoys. They do not agree that their undergraduate program has suffered from a preoccupation with their graduate and research programs. The administration is concerned that such a perception arose within the committee and will work with the department to ensure that it does not indeed become fact. The Board shares your concern about the lack of women on the departmental faculty. While we are not willing to direct the administration to hire less-qualified candidates on the basis of gender or race, we are nevertheless committed as an institution to increasing the numbers of women and minorities on the faculty.

Your concerns about the need for strength in polymer materials and the strength of the Engineering Division are well taken. We have added two polymer scientists, one in Chemical Engineering and one in Chemistry, and have made great strides in upgrading the Engineering Division with the hiring of eight new faculty and the acquisition of three endowed chairs, all in the past three years. With these hires and the unique interdisciplinary degrees in engineering systems, the division is now on a path that can lead to a level of excellence matching the more mature programs on campus.

The issues of space and laboratory equipment have received much attention by the department and the administration in recent months. We have made some progress on facilities upgrades through a combination of federal grants and institutional funding, the latter represented by more than $750,000 in matching funds, but we are anticipating a major breakthrough in the form of state funding of a $25 million renovation of Hill Hall within the next two years. We agree that a laboratory maintenance program is essential and the department has now implemented one. The faculty agree that a limit has been reached in converting laboratories into office space and they will make further efforts to better utilize the existing space and to discard old and unused equipment. Also, the recruitment of a technician into the physical metallurgy area is planned within the next twelve months. This addition will help to address the concern about equipment maintenance that you raised.

New initiatives are underway to improve student placement, including increased interaction with the semiconductor industry.

In summary, we are extremely grateful and pleased with the review and report of the committee. It is our intention to implement as many of the suggestions as possible within the next twelve months and we look forward to your next visit.

On behalf of the Board of Trustees and the entire Mines community, I want to thank you again for your professional observations and the excellent guidance which you have provided in this review.

Sincerely,

Donald E. Miller
President

Outline and Approach of Visiting Committee Report:

The Committee approached its task sensitive to the need to respond to the specific queries raised by the Department through its Chair, while recognizing its limitations. In particular, the short amount of time of the visit the recognition of the parralel long reange planning effort and the collective experience from previous visits, encouraged the group to use the visits with particular constituencies as the basis of comments and recommendations. Accordingly, the report is presented from the interpretive viewpoints of the undergraduate students, the graduate students, including job prospects and placement support and the faculty, followed by an examination of the long standing issues of research activities, space, equipment and laboratory facilities. Finally, some comments are presented on the Kroll Institute and its role in the Environmental Research Institute.

Undergraduates Students

A recognized and great strength of both the Department and the Colorado School of Mines is the quality of the undergraduate experience.. Almost unanimously, students spoke of the positive character of the experience, with little interest expressed for a broader education, more in the liberal arts tradition. A varying number (15-29) attended the interview and most participated. There were up to 7 seniors. Half of the undergraduates were from out-of-state.

Summary of Departmental Strengths:

- Professors are accessible, are very good teachers and seldom miss lectures;
- Professors, not TA's teach;
- Rigorous technical content is highly valued;
- The processing emphasis in course work is good;
- There is a lot of good equipment.

Summary of CSM Strengths:

- It is easy to adjust as an incoming freshman;
- There is not a comparable MME program elsewhere;
- Available financial support is very important;
- The strong graduate program is a drawing card.

The following are specific responses to questions raised by the Committee, as well as unsolicited comments. You are encouraged to arrive at

your own conclusion of the validity of the sample size.

EPICS Program: This is a good concept which often is poorly executed. Duration is excessive and the value per credit hour is low. Definition of guidelines/objectives for team problems is often vague and effective conduct of the exercise is hampered by poor or indifferent mentoring and guidance. EPICS might be more useful if taught in the junior year. 6 credit hours might be appropriate, not 11.

Liberal Arts Course Requirements: Some students would prefer a purely technical curriculum, but there was general agreement on the value of liberal arts. However, the selection is limited and it is hard, for instance, to enroll in a foreign language sequence.

CSM 101 Requirement: This course received uniformly low marks: General concerns were that too much time is consumed in transferring too little knowledge and that the requirement to keep a diary is of questionable value. One student's suggestion was that as an alternative approach, faculty from various departments spend 1-2 weeks talking about their disciplines department, and profession.

Field Sessions, Co-op Programs and Summer Employment: Students appreciate exposure to various industries and to industry problems. A 6-week summer session rules out summer work, but there is no substitute for at least some sort of summer session; one 3-weeks long might still allow time for a job. (Only 5 of the 29 students have had a summer job.) Those enrolled in co-op programs feel that they are invaluable. Most seemed to feel that they need a better understanding of what industry is about, a desire likely shared by previous generations of students.

Technical Course Diversity: A few felt that the current heavy emphasis on steel should be broadened, balanced with more exposure to alternative materials.

Laboratory and Equipment Support: Most felt that T.A.'s do a good job with laboratory instruction. However, most also felt that equipment downtime due to insufficient technician support is excessive. They did appreciate being able to use equipment themselves and recognize that this luxury is often absent in other universities.

Research vs. Teaching: There was general agreement that strong research professors also are often very good teachers.

Definition of a "Bad Professor": A "bad professor" is one who cannot present new material in an understandable way. These students really do respect and expect the ability to teach.

Mineral Processing and Extractive Metallurgy: These students, in the main, were not interested in this area, either for course work, research or employment, but pointed out that Department faculty have done little to explain job opportunities or the importance of this field for a wide range of industrial problems.

Graduate Students:

The Committee met with approximately 30 graduate students, including 5 in the extractive area. The students were generally quite satisfied with the level of education being received at CSM and were particularly pleased and vocal that they got very good attention from the faculty. In many instances the students had chosen Colorado School of Mines for graduate study because they had heard that the faculty was much more accessible than at competing universities, ensuring a more productive research experience. We heard no criticism that this was indeed not the common experience.

Summary of Departmental Strengths:

- Strong faculty
- Good equipment
- Financial support
- Areas of emphasis such as the Steel Center.

The following is a digested summary of specific issues discussed and/or raised.

Facilities:

Graduate students are expected to look after their own laboratories and they often do an uneven job. There seemed to be a perception that some labs are unsafe - (unvented acid storage cabinets) were cited as an example). The machine shop is well-equipped, but hard to use because of the protectiveness of

the person in charge. There should be a "shop course" and a way of being "certified" to use the shop. There were complaints about accessibility to the machine shop; the students felt that money could be saved by better utilizing the machine shop, although it is very well maintained.

Curriculum:

Some students wanted to declare a minor in the Engineering Department but feel there are insufficient courses which truly are graduate level. Tribology, for instance, is geared to undergraduates. Several students mentioned that they would have preferred to have chosen a minor in either Mechanical Engineering or some other discipline. However, they were unable to get the required courses to complete the minor because they were unavailable in the ME department. Other students felt that they would have liked to take a minor in business, for example, but again the courses were unavailable. Generally they ended up satisfying the minor requirements by taking additional courses in materials. It is clear that more attention should be paid to working with other departments to insure that courses for a satisfactory minor are made available. Interestingly, the students were not aware that cross registration without paying an additional fee was available at CU and more adequate dissemination of this information would be a major benefit.

Options, Regulations and Exams:

The difference between a materials science and a materials engineering degree was discussed and the students generally felt that there was no real distinction between them. A materials science degree is not as interdisciplinary as it should be for a science-based degree. Moreover, the courses offered, particularly in the physics department, are thought to be inadequate and do not have a good reputation among the students. Regarding the value of and interest in an extractive option, three of the five received BS degrees elsewhere and came to CSM because of faculty like John Hager. However, this option is undersold to lower division students. Most of the extractive students in attendance are aiming for careers either in environmental work or in the overseas mining industry.

There was a strong sentiment among the graduate students that the new regulations for satisfying the qualifier in comprehensive exams are somewhat of an unknown. A written document clearly describing the changes being planned by the faculty would be appreciated in these areas.

Computing Facilities:

The adequacy and currency of the local area network at the school was discussed at some length. There were complaints that while there are sufficient PCs, little additional hard disk space is available on the current system and most software is outdated. For example, the current spreadsheet available is Lotus 2.1, and the students feel that in order to keep up with their needs, a version of Excel would be much more appropriate. These issues are understood by the committee. It is expensive to update software but the feeling was that a systematic plan to do this is not really in place and is definitely needed.

Library:

Some discussion of the library situation produced conflicting comments by the students. Some thought the library was good, while others thought it was poor. The interlibrary loan system was generally accepted as being excellent and perhaps the shortcoming was that recent texts in the metallurgy and materials field are generally lacking.

Other Issues:

Comments made about student fees and health insurance indicated that it is not initially clear to the students that these fees are going to have to be paid by the student out of the stipend. Several students were surprised when these deductions were taken from their pay checks. It was suggested the faculty have been too glib in claiming that the stipend would be more that adequate when, in fact, it is generally not and students frequently end up having to borrow additional money. This is particularly true recently due to a rapid climb in the price of rentals in the area. There was some discussion of parking fees; a student is not permitted to drive on campus without having paid the parking fee. Although enforcement of this regulation is virtually impossible, the students find this somewhat of an irritation. In addition, and again, the existence of the fee is frequently not made clear up front when the student is being interviewed.

Some comments on the value of the graduate student association indicated some dissatisfaction with this group. There is little feeling of real community among the graduate students. For example, the ceramic students and the metallurgy students see each other only infrequently and do not feel like a coherent group. The graduate students association apparently is comprised of a relatively small group of students who claim to represent the entire graduate

student body,a claim questioned by many in attendance. Broader based planning to improve this situation might be of significant benefit. For example, although a weekly seminar is supposedly organized and attendance is required, only about half the students attend this seminar.

Faculty:

We have listened to and interpreted the opinions of the faculty. In our judgement, they accurately define the isues and challenges to be faced in the coming years. The generation gap, existing in so many programs and universities, continues to be in evidence in then Department. But, as mentioned previously, the sensitivity and balance between undergraduate and graduate education and research is impressive. That said, real challenges are in the offing, including the wisdom and the ability to sustain the current graduate student population and research volume, the future of more traditional extractive metallurgy, and, by extension, defining new directions of scholarship and departmental needs, such as a recognized need for theoretical support.

We recommend that for our next visit these issues dominate the activities of the committee. Issues of particular importance and some urgency include, developing a contingency plan for replacing the established leaders in the department; defining and maintaining a mineral processing capability and reaching broad consensu on the balance between undergraduate and graduate teaching and research. An area that that needs immediate attention is to be more aggressively committed to hiring women and minorities, a glaring and highly visible problem.We recommend a major effort to identify a woman for the open ceramist position, hopefully with a non-structural background.

While, some talked about their specialties and duties, about half expressed strong opinions about broader issues. Worringly, the eleventh faculty member to speak was the first one to mention the undergraduate program, seemingly indicative of great preoccupation with research and post-graduate education. Almost all faculty believe the the Department is at a crossroads. The progress and positive changes of the last few years could be compromised. Specifically, research in some sectors, especially ceramics, welding and joining, is too dependent on DOD funds, which are increasingly in shorter supply. As there is typically very little industry support for these fields,concerns were voiced that it will become increasingly more difficult to maintain the high levels of annual funding necessary to provide proper support for the current numbers of graduate students in these fields.

Some Specific Issues:

•Materials Science has become truly interdisciplinary, but the MME Department is carrying a disproportionate share of the load. Their is a glaring weakness in inadequate coverage of polymeric materials from allied departments.

•The undergraduate program has been weakened by the elimination of the 2nd semester ofphysical chemistry, dynamics, fluids, and organic chemistry. Some faculty expressed a need for courses in introductory ceramics, introductory polymers, and statistical process control/experimental design. There is clearly a lot of stress on the curriculum, with everyone wanting to add "needed: material, but no candidates for elimination. An exception, suggested by a number of faculty would be Geology 101 and EPICS,but these are considered sacred because they are "required by the Board of Trustees". Some asked if these decisions could be revisited, a recommendation supported by some, but not by all, of the Visiting Committee.

• Many suggested that The Engineering Department could become a "default setting", providing a potentially low-quality substitute for a more technical education. Is the Engineering Department preparing students for the year 2020? This issue of depth versus breadth is resounding across most universities, paricularly as engineering education is undergoing serious reevaluation.

•How many graduate students should there be?-128 may be too many. The recent influx has led to a shortage of offices, crowded facilities, and poor faculty/student interaction - especially during the first several months of the academic year. The committee feels that while the expansion in graduate research activities over the last two years has contributed significantly to the strength and stature of the school and that this trend should be continued, the number of students per faculty member should not exceed the current level. Our confidence in the judgement of the faculty and the Chair, leads us to support plans to hire selectively in Ceramics and theoretical Materials Science, with the caveat of better balanced funding between government and industry and sensitivity of employability of graduates in emerging fields.

Research activities, space and equipment:

On the question of office space, it is clear that the laboratories and offices are currently cramped and that in several instances graduate student offices have been created by moving laboratory equipment out of areas and creating new office space. This trend should not continue and clearly office space is required if further rational and supportable expansion is to be achieved without disruption.

Laboratory space has been a continuing issue presented to the committee and new space is obviously needed The high priority given to this by the administration is applauded. In the interim, it is our sense that there is a fair amount of space housing duplicate equipment and/or a great deal of old and somewhat underused equipment. If some of this older equipment were retired, then room for new equipment could be added, as required, until a new facility comes on the line. We suggest that the often irresistable temptation to accept donated equipment be very carefully monitored.

The system requiring teaching assistants to provide three hours of maintenance per week is apparently not working well in some laboratories and more attention should be paid to insuring that laboratory maintenance occurs as scheduled. Some form of signoff system might be appropriate. There were some laboratories, such as Physical Metallurgy, where the maintenance had clearly not been performed as required, while other labs, on the other hand were clean and clearly well maintained and consequently well used. A valuable and obviously transferrable lesson.

Management of the Department Laboratories and Equipment:

The committee spent a considerable amount of time discussing the management of the department laboratories and equipment. Although the general situation with availability of new and functional equipment was good overall, there is a clear need for additional technical help in the laboratories to keep the equipment adequately maintained and functioning. If funding is available, three additional technicians, in the Physical Metallurgical Lab, the Electron Microscopy Lab and the Machine Shop would dramatically improve service and teaching and research efficiency. An alternative approach would be to add post docs to the staff using contract research dollars. They could be assigned research rather than teaching responsibilities and thus would be able to assist in the management of the laboratories and normal upkeep of the equipment.

Student Placement Prospects:

Placement is an important issue for the Department of Metallurgical and Materials Engineering whicharose in interviews with both the graduate and undergraduate students. If the trend in low placement continues, concern was voiced that it could have a negative impact on departmental enrollment. Unfortunately, placement dropped significantly in the 1992-1993 academic year. This is widely believed due to restructuring and tightening of engineering budgets in industry, with subsequent loss of positions in many firms where MME students traditionally seek employment. This drop in placement may also be due, in part, to the extension of faculty research into areas currently without a substantial industrial base in the West, such as ceramics. New initiatives are clearly needed to help MME students secure employment. In particular, the Visiting Committee suggests that the faculty become even more involved in placement issues. One suggestion made is for them to have more direct contact with recruiters during campus visits.Further, the committee suggests expansion of summer jobs programs. This should improve the student's understanding of the metallurgical and materials industry and will also give the students an opportunity to develop contacts that they can use in their senior year to secure full-time employment.

Role of the Kroll Institute for Extractive Metallurgy (KIEM):

The committee supports the encouragement of more joint research between the Environmental Institute (ERI) and KIEM. Cooperative research will be a significant attribute to CSM, because faculty interaction will greatly multiply the range of issues that can be addressed in the CSM environmental research initiative.

The KIEM faculty could contribute critical skills to this alliance in field application of environmental remediation technologies,building on their solids processing experience in both aqueous and high-temperature environments. Solids processing expertise underlies a major fraction of environmental remediation cases, most importantly in the advancement of embryonic environmental technologies that have immense economic potential. Soil washing and comminution are particular examples of such emerging technologies In high-temperature processingsuch individuals also bring important expertise in heat and mass transfer allowing them to address critical remediation issues

involving key high-temperature processes, such as waste incineration. This is also the case for aqueous processing which involves dissolution, purification and production of environmentally sound products.

An effective mechanism by which ERI and KIEM faculty can work together, is to foster joint research between both organizations, an approach that can be accelerated through joint appointments of faculty members into both organizations In summary, the KIEM - ERI partnership is a natural alliance, based on the diversity of the backgrounds of both participating organizations,and one that will ensure that CSM can participate successfully in the vibrant environmental research arena well into the 21st century.

For the Visiting Committee:

Phil Abramowitz
Mel Bernstein
Terry McNulty
Terry Mohr
Bruce Palmer
Neil Paton

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II-a
Presented by Dr. Schowengerdt

Subject: Faculty Hiring Actions

Background Information:

A list of faculty hiring actions for fall 1994 is attached.

9 tenure-track
95 non-tenure track:
22 no-remuneration
12 regular full-time (music, etc.)
3 Visiting/Chair
57 Adjunct

Action Motion Requested:

Information Only

CSM
BOARD OF TRUSTEES

AGENDA ITEMS

Date of Meeting 9/9/94
Item Number II-b
Presented by Kidnay

Subject:

Graduate School Admissions

Background Information:

Graduate admissions for Fall 1994, through August 31, 1994 Previous year numbers are for the corresponding time period.

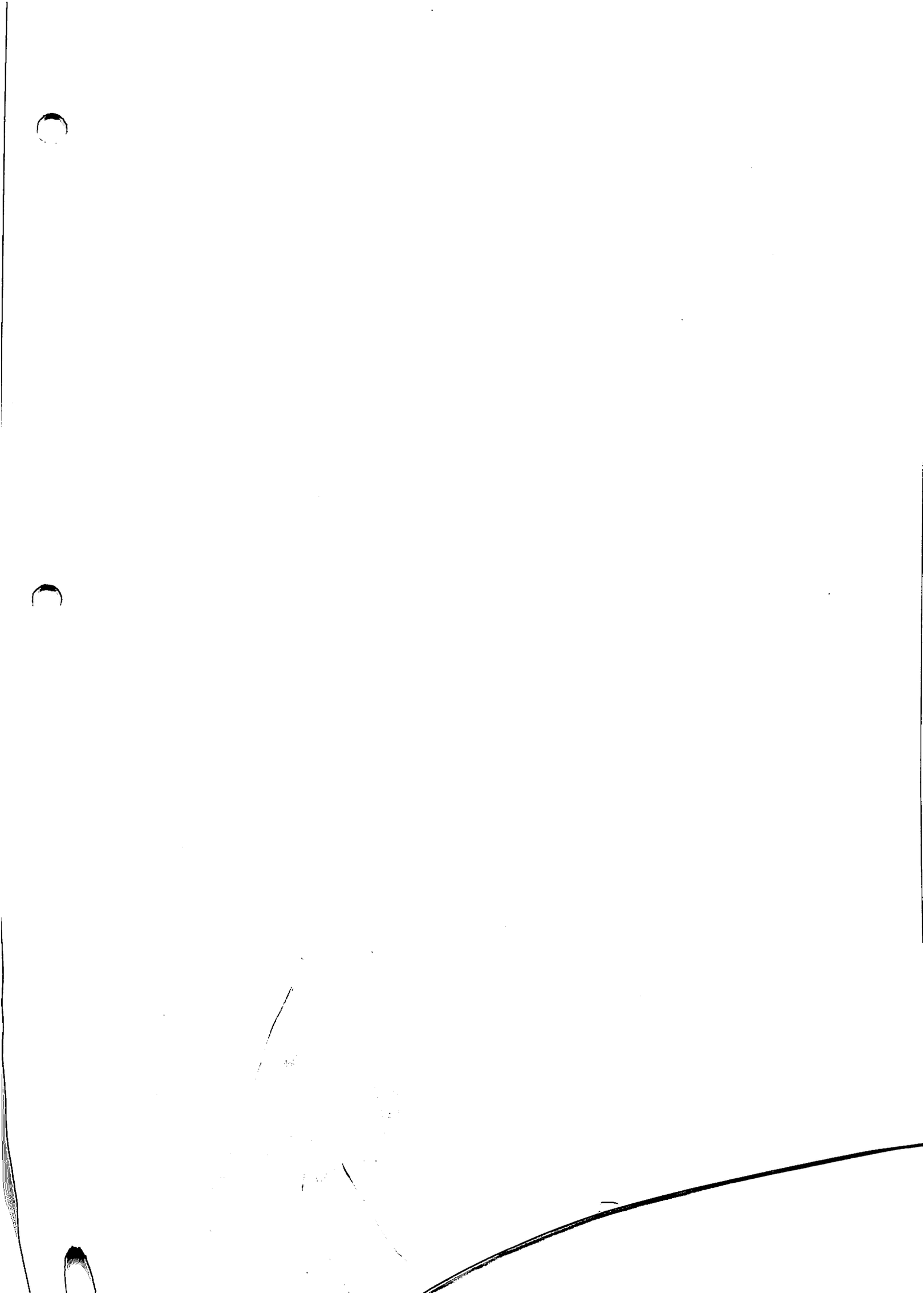
Applications received (total)	1994	832			
	1993	823			
	1992	810			
Accepted (total)	1994	470	1994	Full-Time (supported)	290
				Full-Time (no support	49
				Part-Time	11
	1993	480			
	1992	561			
Intends to Enroll (total)	1994	202			
	1993	202			
	1992	220			
Applications accepted but Withdrawn	1994	120			
	1993	141			
	1992	133			

Action Motion Requested:

None. Information only.

GRADUATE STUDENT ADMISSIONS FOR FALL, 1994
Through August 31, 1994

	Received	Accepted	Rejected	Under Review	Intends to Enroll
Chemistry					
1994	23	13	9	1	4
1993	28	21	7	0	8
1992	20	22	5	3	7
Chemical Engineering					
1994	94	31	62	1	15
1993	101	28	72	1	14
1992	104	56	47	1	20
Engineering					
1994	37	29	7	1	13
1993	16	9	3	4	5
1992	22	15	4	3	6
Environmental Science					
1994	155	86	35	34	34
1993	161	118	41	2	47
1992	175	156	19	0	43
Geochemistry					
1994	18	8	10	0	1
1993	10	9	1	0	3
1992	0	0	0	0	0
Geology					
1994	94	49	41	4	17
1993	76	44	32	0	11
1992	73	42	31	0	12
Geophysics					
1994	58	31	23	4	14
1993	70	41	28	1	17
1992	57	30	27	0	18
Mathematics					
1994	56	49	4	3	26
1993	64	56	7	1	27
1992	51	39	9	3	22



CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II-c
Presented by Young

Subject: Enrollment-Admissions Report

Background Information:

Action Motion Requested:

Information Only

CSM
BOARD OF TRUSTEES

AGENDA ITEMS

Date of Meeting 9/9/94
Item Number II-b
Presented by Kidnay

Subject:

Graduate School Admissions

Background Information:

Graduate admissions for Fall 1994, through August 31, 1994 Previous year numbers are for the corresponding time period.

Applications received (total)	1994	832			
	1993	823			
	1992	810			
Accepted (total)	1994	470	1994	Full-Time (supported)	290
				Full-Time (no support	49
				Part-Time	11
	1993	480			
	1992	561			
Intends to Enroll (total)	1994	202			
	1993	202			
	1992	220			
Applications accepted but Withdrawn	1994	120			
	1993	141			
	1992	133			

Action Motion Requested:

None. Information only.

GRADUATE STUDENT ADMISSIONS FOR FALL, 1994
Through August 31, 1994

	Received	Accepted	Rejected	Under Review	Intends to Enroll
Chemistry					
1994	23	13	9	1	4
1993	28	21	7	0	8
1992	20	22	5	3	7
Chemical Engineering					
1994	94	31	62	1	15
1993	101	28	72	1	14
1992	104	56	47	1	20
Engineering					
1994	37	29	7	1	13
1993	16	9	3	4	5
1992	22	15	4	3	6
Environmental Science					
1994	155	86	35	34	34
1993	161	118	41	2	47
1992	175	156	19	0	43
Geochemistry					
1994	18	8	10	0	1
1993	10	9	1	0	3
1992	0	0	0	0	0
Geology					
1994	94	49	41	4	17
1993	76	44	32	0	11
1992	73	42	31	0	12
Geophysics					
1994	58	31	23	4	14
1993	70	41	28	1	17
1992	57	30	27	0	18
Mathematics					
1994	56	49	4	3	26
1993	64	56	7	1	27
1992	51	39	9	3	22

GRADUATE STUDENT ADMISSIONS FOR FALL, 1994
Through August 31, 1994

	Received	Accepted	Rejected	Under Review	Intends to Enroll
Mineral Economics					
1994	45	40	4	1	26
1993	44	38	5	1	17
1992	42	39	3	0	24
Executive					
1994	0	0	0	0	0
1993	12	11	0	1	6
1992	0	0	0	0	0
Materials Science					
1994	43	13	29	1	3
1993	41	12	28	1	10
1992	37	14	16	1	6
Mining					
1994	19	17	2	0	9
1993	25	20	5	0	7
1992	22	17	5	0	6
Metallurgy					
1994	78	32	43	3	19
1993	59	18	34	7	13
1992	65	33	32	0	23
Petroleum Engineering					
1994	55	49	5	1	9
1993	43	26	17	0	7
1992	45	35	10	0	8
Physics					
1994	48	15	32	1	7
1993	62	18	43	1	6
1992	64	47	15	2	13

GRADUATE STUDENT ADMISSIONS FOR FALL, 1994
Through August 31, 1994

	Received	Accepted	Rejected	Under Review	Intends to Enroll
Professional Degrees					
Geology					
1994	7	6	1	0	5
1993	10	10	0	0	3
1992	22	15	2	5	12
Geophysics					
1994	2	2	0	0	0
1993	0	0	0	0	0
1992	1	1	0	0	0
Petroleum Engineering					
1994	1	1	0	0	0
1993	1	1	0	0	1
1992	0	0	0	0	0
Totals					
1994	832	470	307	55	202
1993	823	480	323	20	202
1992	810	561	225	24	220

COLORADO SCHOOL OF MINES

1500 Illinois Street
Golden, CO 80401-1887
303/273-3280
303/273-3040 (FAX)

Board of Trustees

September 9, 1994

S.D. Chesebro'
President and CEO
Tenneco Gas
1010 Milam St.
P.O. Box 2511
Houston, TX 77252-2511

Dear Steve:

Thank you for your insightful report, dated June 16, 1994, of the visit of the Petroleum Engineering Visiting Committee to the department on December 14-15, 1993. Your report has been read by the departmental faculty, the administration and the board. We offer the following comments in response.

We are pleased that the committee saw progress in implementing recommendations made in early 1992. We believe that the department has made progress in broadening its research interests and developing funded research programs to complement its already outstanding undergraduate program. We share your enthusiasm for the first-rate new facilities which the faculty and students now enjoy and we hope that this investment in infrastructure will lead the department to a new level of prominence.

The committee wisely chose to focus on funding during this visit. As we discussed when you were here, funding for the departments at CSM is a complex issue involving many sources of revenue and many internal and external constraints. One of the most important and controversial decisions involves the deployment of personnel, as is the case in any organization. Based on the guidelines used by the administration for all of the departments, Petroleum Engineering currently has an appropriate number of faculty given the number of students in the department. While both of these numbers have decreased dramatically over the past ten years, the balance meets the guidelines. We realize, however, that this does not change the fact that a critical minimum has been reached and the faculty feel overworked. The administration will review the distribution of faculty positions across the campus with the department heads this month and make a decision on whether to hire in Petroleum Engineering by the end of September.

Thank you again for your visit and report. We value greatly the interest and dedication shown by the committee.

Sincerely,

Donald E. Miller

REPORT TO THE PRESIDENT
COLORADO SCHOOL OF MINES

FROM THE EXTERNAL VISITING COMMITTEE
PETROLEUM ENGINEERING DEPARTMENT

During the 2-day meeting of the Committee on December 14-15, 1993, we held extensive discussions with Dr. van Kirk and other faculty. We looked at the excellent new facilities in Alderson Hall, and we held a private meeting with interested students, both undergraduate and graduate. Details of this information exchange are contained in the attached minutes.

The Committee is pleased to see progress in implementing the recommendations we made in early 1992.

Funding was the major focus of this year's Committee meeting. We found that need for additional faculty is the most serious concern facing the PE Department at this time. The loss of 4 faculty over the past several years through retirements and resignations has been a significant change in the staffing of the Department. We believe that ABET accreditation for the PE Department could be at risk, given the current level of faculty devoted to undergraduate teaching. Our discussions with students reinforce this view; they have noticed a reduction in time available by faculty for students.

We believe that one, possibly two, additional faculty are needed now in the PE Department. We believe the School and the Department must do whatever is necessary to reduce the risk of non-accreditation by ABET. Obviously, improved funding would help solve this problem.

Although we recognize the need for additional funds to equip the new facilities in Alderson Hall, we believe further discussion with the Department and the School is needed to define the best strategy to raise such funds. At the moment, the Visiting Committee has no commitment nor plan to undertake a fund-raising program among alumni and/or industry.

COLORADO SCHOOL OF MINES

1500 Illinois Street
Golden, CO 80401-1887
303/273-3280
303/273-3040 (FAX)

Board of Trustees

September 9, 1994

Dr. I.M. Bernstein
Vice President for Arts, Sciences, and Technology
Tufts University
Medford, MA 02155

Dear Mel:

Thank you for the report dated June 1, 1994 of your visit to the Department of Metallurgical and Materials Engineering in February. We appreciate the thoroughness with which you reviewed the department and your many observations and recommendations. This response incorporates input from both the faculty and the administration.

The Board of Trustees was very pleased to read about the departmental and institutional strengths as presented in your report. At the same time, we were somewhat surprised to learn that the undergraduates in the department had little interest in broadening their education with respect to more liberal arts courses. The School is currently undergoing a comprehensive review of its undergraduate curriculum. At a recent Board retreat there was a clear mandate expressed for such a review and considerable support for major change. In this context, your observations about EPICS, liberal arts requirements, CSM101, the field sessions, the co-op program and technical course diversity are timely and of great interest to us. They will be given serious consideration as we move forward with the curriculum review and revision process.

We remain concerned about the state of mineral processing and extractive metallurgy as a viable sub-discipline at Mines. We have reached agreement with Hazen Research for shared funding of a position in this area, which we hope to fill this academic year. We are determined not to allow this area to disappear as a choice for our students and we will continue our efforts to educate them on the value of the field, especially as it relates to environmental remediation.

We agree that more possibilities for minors in engineering and business are needed. With the recent approval of graduate degrees in engineering systems and an undergraduate degree in economics, we should soon have the capability on campus to offer such minors. We also agree with you that more effort needs to be expended to help students differentiate between the materials engineering and materials science programs. Much of the confusion is due to the transitional nature of the latter and we are confident that as each program matures, students will become more familiar with what is required and the differences between the programs. We agree that more needs to be done to improve computing and library facilities. We have increased general fund allocations to each of these areas by over 10% this year. We are in the process of upgrading the campus network, wiring the dorms, providing compatible email capabilities in all the departments, adding monographs to the collections, improving on-line access to periodicals and, in general, bringing computing and information resources into a closer working relationship.

We are quite pleased to hear the Visiting Committee's opinion that the sensitivity and balance between the undergraduate and graduate programs in the department is impressive. The faculty agree that there needs to be a continuing review on

the efficacy of sustaining the current graduate population and research volume, but they are quite naturally reluctant to forego new research opportunities. This kind of approach to their jobs over the years is what has given the department the stature it now enjoys. They do not agree that their undergraduate program has suffered from a preoccupation with their graduate and research programs. The administration is concerned that such a perception arose within the committee and will work with the department to ensure that it does not indeed become fact. The Board shares your concern about the lack of women on the departmental faculty. While we are not willing to direct the administration to hire less-qualified candidates on the basis of gender or race, we are nevertheless committed as an institution to increasing the numbers of women and minorities on the faculty.

Your concerns about the need for strength in polymer materials and the strength of the Engineering Division are well taken. We have added two polymer scientists, one in Chemical Engineering and one in Chemistry, and have made great strides in upgrading the Engineering Division with the hiring of eight new faculty and the acquisition of three endowed chairs, all in the past three years. With these hires and the unique interdisciplinary degrees in engineering systems, the division is now on a path that can lead to a level of excellence matching the more mature programs on campus.

The issues of space and laboratory equipment have received much attention by the department and the administration in recent months. We have made some progress on facilities upgrades through a combination of federal grants and institutional funding, the latter represented by more than $750,000 in matching funds, but we are anticipating a major breakthrough in the form of state funding of a $25 million renovation of Hill Hall within the next two years. We agree that a laboratory maintenance program is essential and the department has now implemented one. The faculty agree that a limit has been reached in converting laboratories into office space and they will make further efforts to better utilize the existing space and to discard old and unused equipment. Also, the recruitment of a technician into the physical metallurgy area is planned within the next twelve months. This addition will help to address the concern about equipment maintenance that you raised.

New initiatives are underway to improve student placement, including increased interaction with the semiconductor industry.

In summary, we are extremely grateful and pleased with the review and report of the committee. It is our intention to implement as many of the suggestions as possible within the next twelve months and we look forward to your next visit.

On behalf of the Board of Trustees and the entire Mines community, I want to thank you again for your professional observations and the excellent guidance which you have provided in this review.

Sincerely,

Donald E. Miller
President

Outline and Approach of Visiting Committee Report:

The Committee approached its task sensitive to the need to respond to the specific queries raised by the Department through its Chair, while recognizing its limitations. In particular, the short amount of time of the visit the recognition of the parralel long reange planning effort and the collective experience from previous visits, encouraged the group to use the visits with particular constituencies as the basis of comments and recommendations. Accordingly, the report is presented from the interpretive viewpoints of the undergraduate students, the graduate students, including job prospects and placement support and the faculty, followed by an examination of the long standing issues of research activities, space, equipment and laboratory facilities. Finally, some comments are presented on the Kroll Institute and its role in the Environmental Research Institute.

Undergraduates Students

A recognized and great strength of both the Department and the Colorado School of Mines is the quality of the undergraduate experience.. Almost unanimously, students spoke of the positive character of the experience, with little interest expressed for a broader education, more in the liberal arts tradition. A varying number (15-29) attended the interview and most participated. There were up to 7 seniors. Half of the undergraduates were from out-of-state.

Summary of Departmental Strengths:

- Professors are accessible, are very good teachers and seldom miss lectures;
- Professors, not TA's teach;
- Rigorous technical content is highly valued;
- The processing emphasis in course work is good;
- There is a lot of good equipment.

Summary of CSM Strengths:

- It is easy to adjust as an incoming freshman;
- There is not a comparable MME program elsewhere;
- Available financial support is very important;
- The strong graduate program is a drawing card.

The following are specific responses to questions raised by the Committee, as well as unsolicited comments. You are encouraged to arrive at

your own conclusion of the validity of the sample size.

EPICS Program: This is a good concept which often is poorly executed. Duration is excessive and the value per credit hour is low. Definition of guidelines/objectives for team problems is often vague and effective conduct of the exercise is hampered by poor or indifferent mentoring and guidance. EPICS might be more useful if taught in the junior year. 6 credit hours might be appropriate, not 11.

Liberal Arts Course Requirements: Some students would prefer a purely technical curriculum, but there was general agreement on the value of liberal arts. However, the selection is limited and it is hard, for instance, to enroll in a foreign language sequence.

CSM 101 Requirement: This course received uniformly low marks: General concerns were that too much time is consumed in transferring too little knowledge and that the requirement to keep a diary is of questionable value. One student's suggestion was that as an alternative approach, faculty from various departments spend 1-2 weeks talking about their disciplines department, and profession.

Field Sessions, Co-op Programs and Summer Employment: Students appreciate exposure to various industries and to industry problems. A 6-week summer session rules out summer work, but there is no substitute for at least some sort of summer session; one 3-weeks long might still allow time for a job. (Only 5 of the 29 students have had a summer job.) Those enrolled in co-op programs feel that they are invaluable. Most seemed to feel that they need a better understanding of what industry is about, a desire likely shared by previous generations of students.

Technical Course Diversity: A few felt that the current heavy emphasis on steel should be broadened, balanced with more exposure to alternative materials.

Laboratory and Equipment Support: Most felt that T.A.'s do a good job with laboratory instruction. However, most also felt that equipment downtime due to insufficient technician support is excessive. They did appreciate being able to use equipment themselves and recognize that this luxury is often absent in other universities.

Research vs. Teaching: There was general agreement that strong research professors also are often very good teachers.

Definition of a "Bad Professor": A "bad professor" is one who cannot present new material in an understandable way. These students really do respect and expect the ability to teach.

Mineral Processing and Extractive Metallurgy: These students, in the main, were not interested in this area, either for course work, research or employment, but pointed out that Department faculty have done little to explain job opportunities or the importance of this field for a wide range of industrial problems.

Graduate Students:

The Committee met with approximately 30 graduate students, including 5 in the extractive area. The students were generally quite satisfied with the level of education being received at CSM and were particularly pleased and vocal that they got very good attention from the faculty. In many instances the students had chosen Colorado School of Mines for graduate study because they had heard that the faculty was much more accessible than at competing universities, ensuring a more productive research experience. We heard no criticism that this was indeed not the common experience.

Summary of Departmental Strengths:

- Strong faculty
- Good equipment
- Financial support
- Areas of emphasis such as the Steel Center.

The following is a digested summary of specific issues discussed and/or raised.

Facilities:

Graduate students are expected to look after their own laboratories and they often do an uneven job. There seemed to be a perception that some labs are unsafe - (unvented acid storage cabinets) were cited as an example). The machine shop is well-equipped, but hard to use because of the protectiveness of

the person in charge. There should be a "shop course" and a way of being "certified" to use the shop. There were complaints about accessibility to the machine shop; the students felt that money could be saved by better utilizing the machine shop, although it is very well maintained.

Curriculum:

Some students wanted to declare a minor in the Engineering Department but feel there are insufficient courses which truly are graduate level. Tribology, for instance, is geared to undergraduates. Several students mentioned that they would have preferred to have chosen a minor in either Mechanical Engineering or some other discipline. However, they were unable to get the required courses to complete the minor because they were unavailable in the ME department. Other students felt that they would have liked to take a minor in business, for example, but again the courses were unavailable. Generally they ended up satisfying the minor requirements by taking additional courses in materials. It is clear that more attention should be paid to working with other departments to insure that courses for a satisfactory minor are made available. Interestingly, the students were not aware that cross registration without paying an additional fee was available at CU and more adequate dissemination of this information would be a major benefit.

Options, Regulations and Exams:

The difference between a materials science and a materials engineering degree was discussed and the students generally felt that there was no real distinction between them. A materials science degree is not as interdisciplinary as it should be for a science-based degree. Moreover, the courses offered, particularly in the physics department, are thought to be inadequate and do not have a good reputation among the students. Regarding the value of and interest in an extractive option, three of the five received BS degrees elsewhere and came to CSM because of faculty like John Hager. However, this option is undersold to lower division students. Most of the extractive students in attendance are aiming for careers either in environmental work or in the overseas mining industry.

There was a strong sentiment among the graduate students that the new regulations for satisfying the qualifier in comprehensive exams are somewhat of an unknown. A written document clearly describing the changes being planned by the faculty would be appreciated in these areas.

Computing Facilities:

The adequacy and currency of the local area network at the school was discussed at some length. There were complaints that while there are sufficient PCs, little additional hard disk space is available on the current system and most software is outdated. For example, the current spreadsheet available is Lotus 2.1, and the students feel that in order to keep up with their needs, a version of Excel would be much more appropriate. These issues are understood by the committee. It is expensive to update software but the feeling was that a systematic plan to do this is not really in place and is definitely needed.

Library:

Some discussion of the library situation produced conflicting comments by the students. Some thought the library was good, while others thought it was poor. The interlibrary loan system was generally accepted as being excellent and perhaps the shortcoming was that recent texts in the metallurgy and materials field are generally lacking.

Other Issues:

Comments made about student fees and health insurance indicated that it is not initially clear to the students that these fees are going to have to be paid by the student out of the stipend. Several students were surprised when these deductions were taken from their pay checks. It was suggested the faculty have been too glib in claiming that the stipend would be more that adequate when, in fact, it is generally not and students frequently end up having to borrow additional money. This is particularly true recently due to a rapid climb in the price of rentals in the area. There was some discussion of parking fees; a student is not permitted to drive on campus without having paid the parking fee. Although enforcement of this regulation is virtually impossible, the students find this somewhat of an irritation. In addition, and again, the existence of the fee is frequently not made clear up front when the student is being interviewed.

Some comments on the value of the graduate student association indicated some dissatisfaction with this group. There is little feeling of real community among the graduate students. For example, the ceramic students and the metallurgy students see each other only infrequently and do not feel like a coherent group. The graduate students association apparently is comprised of a relatively small group of students who claim to represent the entire graduate

student body,a claim questioned by many in attendance. Broader based planning to improve this situation might be of significant benefit. For example, although a weekly seminar is supposedly organized and attendance is required, only about half the students attend this seminar.

Faculty:

We have listened to and interpreted the opinions of the faculty. In our judgement, they accurately define the isues and challenges to be faced in the coming years. The generation gap, existing in so many programs and universities, continues to be in evidence in then Department. But, as mentioned previously, the sensitivity and balance between undergraduate and graduate education and research is impressive. That said, real challenges are in the offing, including the wisdom and the ability to sustain the current graduate student population and research volume, the future of more traditional extractive metallurgy, and, by extension, defining new directions of scholarship and departmental needs, such as a recognized need for theoretical support.

We recommend that for our next visit these issues dominate the activities of the committee. Issues of particular importance and some urgency include, developing a contingency plan for replacing the established leaders in the department; defining and maintaining a mineral processing capability and reaching broad consensu on the balance between undergraduate and graduate teaching and research. An area that that needs immediate attention is to be more aggressively committed to hiring women and minorities, a glaring and highly visible problem.We recommend a major effort to identify a woman for the open ceramist position, hopefully with a non-structural background.

While, some talked about their specialties and duties, about half expressed strong opinions about broader issues. Worringly, the eleventh faculty member to speak was the first one to mention the undergraduate program, seemingly indicative of great preoccupation with research and post-graduate education. Almost all faculty believe the the Department is at a crossroads. The progress and positive changes of the last few years could be compromised. Specifically, research in some sectors, especially ceramics, welding and joining, is too dependent on DOD funds, which are increasingly in shorter supply. As there is typically very little industry support for these fields,concerns were voiced that it will become increasingly more difficult to maintain the high levels of annual funding necessary to provide proper support for the current numbers of graduate students in these fields.

Some Specific Issues:

•Materials Science has become truly interdisciplinary, but the MME Department is carrying a disproportionate share of the load. Their is a glaring weakness in inadequate coverage of polymeric materials from allied departments.

•The undergraduate program has been weakened by the elimination of the 2nd semester ofphysical chemistry, dynamics, fluids, and organic chemistry. Some faculty expressed a need for courses in introductory ceramics, introductory polymers, and statistical process control/experimental design. There is clearly a lot of stress on the curriculum, with everyone wanting to add "needed: material, but no candidates for elimination. An exception, suggested by a number of faculty would be Geology 101 and EPICS,but these are considered sacred because they are "required by the Board of Trustees". Some asked if these decisions could be revisited, a recommendation supported by some, but not by all, of the Visiting Committee.

• Many suggested that The Engineering Department could become a "default setting", providing a potentially low-quality substitute for a more technical education. Is the Engineering Department preparing students for the year 2020? This issue of depth versus breadth is resounding across most universities, paricularly as engineering education is undergoing serious reevaluation.

•How many graduate students should there be?-128 may be too many. The recent influx has led to a shortage of offices, crowded facilities, and poor faculty/student interaction - especially during the first several months of the academic year. The committee feels that while the expansion in graduate research activities over the last two years has contributed significantly to the strength and stature of the school and that this trend should be continued, the number of students per faculty member should not exceed the current level. Our confidence in the judgement of the faculty and the Chair, leads us to support plans to hire selectively in Ceramics and theoretical Materials Science, with the caveat of better balanced funding between government and industry and sensitivity of employability of graduates in emerging fields.

Research activities, space and equipment:

On the question of office space, it is clear that the laboratories and offices are currently cramped and that in several instances graduate student offices have been created by moving laboratory equipment out of areas and creating new office space. This trend should not continue and clearly office space is required if further rational and supportable expansion is to be achieved without disruption.

Laboratory space has been a continuing issue presented to the committee and new space is obviously needed The high priority given to this by the administration is applauded. In the interim, it is our sense that there is a fair amount of space housing duplicate equipment and/or a great deal of old and somewhat underused equipment. If some of this older equipment were retired, then room for new equipment could be added, as required, until a new facility comes on the line. We suggest that the often irresistable temptation to accept donated equipment be very carefully monitored.

The system requiring teaching assistants to provide three hours of maintenance per week is apparently not working well in some laboratories and more attention should be paid to insuring that laboratory maintenance occurs as scheduled. Some form of signoff system might be appropriate. There were some laboratories, such as Physical Metallurgy, where the maintenance had clearly not been performed as required, while other labs, on the other hand were clean and clearly well maintained and consequently well used. A valuable and obviously transferrable lesson.

Management of the Department Laboratories and Equipment:

The committee spent a considerable amount of time discussing the management of the department laboratories and equipment. Although the general situation with availability of new and functional equipment was good overall, there is a clear need for additional technical help in the laboratories to keep the equipment adequately maintained and functioning. If funding is available, three additional technicians, in the Physical Metallurgical Lab, the Electron Microscopy Lab and the Machine Shop would dramatically improve service and teaching and research efficiency. An alternative approach would be to add post docs to the staff using contract research dollars. They could be assigned research rather than teaching responsibilities and thus would be able to assist in the management of the laboratories and normal upkeep of the equipment.

Student Placement Prospects:

Placement is an important issue for the Department of Metallurgical and Materials Engineering whicharose in interviews with both the graduate and undergraduate students. If the trend in low placement continues, concern was voiced that it could have a negative impact on departmental enrollment. Unfortunately, placement dropped significantly in the 1992-1993 academic year. This is widely believed due to restructuring and tightening of engineering budgets in industry, with subsequent loss of positions in many firms where MME students traditionally seek employment. This drop in placement may also be due, in part, to the extension of faculty research into areas currently without a substantial industrial base in the West, such as ceramics. New initiatives are clearly needed to help MME students secure employment. In particular, the Visiting Committee suggests that the faculty become even more involved in placement issues. One suggestion made is for them to have more direct contact with recruiters during campus visits.Further, the committee suggests expansion of summer jobs programs. This should improve the student's understanding of the metallurgical and materials industry and will also give the students an opportunity to develop contacts that they can use in their senior year to secure full-time employment.

Role of the Kroll Institute for Extractive Metallurgy (KIEM):

The committee supports the encouragement of more joint research between the Environmental Institute (ERI) and KIEM. Cooperative research will be a significant attribute to CSM, because faculty interaction will greatly multiply the range of issues that can be addressed in the CSM environmental research initiative.

The KIEM faculty could contribute critical skills to this alliance in field application of environmental remediation technologies,building on their solids processing experience in both aqueous and high-temperature environments. Solids processing expertise underlies a major fraction of environmental remediation cases, most importantly in the advancement of embryonic environmental technologies that have immense economic potential. Soil washing and comminution are particular examples of such emerging technologies In high-temperature processingsuch individuals also bring important expertise in heat and mass transfer allowing them to address critical remediation issues

involving key high-temperature processes, such as waste incineration. This is also the case for aqueous processing which involves dissolution, purification and production of environmentally sound products.

An effective mechanism by which ERI and KIEM faculty can work together, is to foster joint research between both organizations, an approach that can be accelerated through joint appointments of faculty members into both organizations In summary, the KIEM - ERI partnership is a natural alliance, based on the diversity of the backgrounds of both participating organizations,and one that will ensure that CSM can participate successfully in the vibrant environmental research arena well into the 21st century.

For the Visiting Committee:

Phil Abramowitz
Mel Bernstein
Terry McNulty
Terry Mohr
Bruce Palmer
Neil Paton

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II-a
Presented by Dr. Schowengerdt

Subject: Faculty Hiring Actions

Background Information:

A list of faculty hiring actions for fall 1994 is attached.

9 tenure-track
95 non-tenure track:
22 no-remuneration
12 regular full-time (music, etc.)
3 Visiting/Chair
57 Adjunct

Action Motion Requested:

Information Only

SPONSORED PROJECTS
Incremental Funding
(New Agreements and Amendments)
AUGUST 1994

Project #	Sponsor	Contract #	Principal Investigator	New Contracts	Amendments
4-41433	U.S. National Park Service	CA 7029-4-0017	Kolm/van der Heijde/Dawson/ GGE/IGWMC/ESE	$ 24,438	
4-49509	American Welding Society		Edwards/CWJR/MME		20,000
4-41434	EG&G Rocky Flats (DOE)	MTS-353044-001NM3	Golden/Murphy, H./EIRF	45,936	
4-41435	NREL (DOE)		Baughman/EMFI	7,500	
4-41429	Rocky Flats Local Impacts Initiative (DOE)		Baughman/SPACE	25,000	
4-41436	NSF	IRI-9320318	Murphy, R./MCS		4,000
4-41157	USGS	14-08-0001-23591	Mittag-Miller/ADM		3,800
4-41245	DOE	DE-FG02-92ER14294	Ely/CEPR		112,753
4-49594	Neil & Associates, Inc.		Ozdemir/EMI/MN	6,000	
4-49593	KN Energy, Inc.	AFE 80954	Dawson/ESE	8,000	
4-41437	ASU (NSF)	KMD2414-3-4/SUB	Steele/EG	1,519	
4-41442	UCB (NASA)	BS0044963	Linne/EG	10,707	
4-41439	NREL (DOE)	XAR-4-14371-01	Knecht/CEPR	58,406	
4-41441	USGS	1434-94-A-1268	Curtis/IERS/GGE	38,309	
4-41438	Office of Surface Mining	WSC-COOP-CT4-14009	Baughman/EMFI	10,000	
4-41443	BDM-Oklahoma (DOE)	G4S40893	Barber/SPACE	94,516	
4-41445	Sandia Nat'l Lab. (DOE)	AG-4951	Honeyman/ESE		30,193
4-41446	NSF	EAR-9406074	Harrison/Wildeman/GGE/CGC	64,830	
4-41447	Dept. of Education	PO 42A30878-94	Rathe/ADM	174,590	
4-41448	NSF	BES-9410343	Figueroa/ESE	28,922	
95	Consortium Mobil Explor. Prod. Petrobras		Hansen/GP	50,000	
4-49596	Golden Tech. Co., Inc.	GTC-94CSM001	Readey/CCAC/MME	11,762	
4-41256	NSF	CTS-9215795	McKinnon/CEPR		71,787
4-41396	EPA	CX 822746-01-0	Anderson, K./ME		16,000
4-41345	EPA	X 822672-01-0	Baldwin/Graboski/CIFER/CEPR	349,555	
4-41350	EPA	X 822672-01-0	Baldwin/Graboski/CIFER/CEPR	150,445	
4-41253	EG&G Rocky Flats (DOE)	ASC226094KG	VanHaverbeke/ESE		107,517
4-49485	Consortium Oryx Energy Co. Conoco		Bleistein, et al./CWP/MCS		52,500
4-49513	Consortium Alberta Energy Conoco China Nat'l Petro. Corp. Japan National Oil Corp.		Davis/GP		92,500
4-41444	GE Aircraft Engines (NASA)	200-1Q-14L22981	Chidambaram/Edwards/ CWJR/MME	61,578	
				$1,222,013	$511,050

FY to Date	Month	Cumulative	Last Year Cumulative
July	$ 1,110,924	$1,110,924	$ 704,762
August	$ 1,733,063	$2,843,987	1,737,395
September			2,652,722
October			4,789,625
November			5,807,241
[illegible]ber			6,531,157
[illegible]y			7,410,309
February			8,625,057
March			9,878,566
April			11,222,564
May			12,035,959
June			14,179,022

NEW SPONSORED PROJECTS AWARDS
AUGUST 1994

Principal Investigator(s)	Department	Sponsor	Amount	Title
Dr. Kenneth E. Kolm/ Dr. Paul van der Heijde/ Dr. Helen Dawson	Geology and Geological Engineering/IGWMC/ ESE	U.S. National Park Service	$ 24,438	A Study Determining Water Infiltration Routes from Structures Located Above Carlsbad Cavern, Carlsbad Caverns National Park, New Mexico
Dr. Glen R. Edwards	Center for Welding & Joining Research/MME	American Welding Society	$ 20,000*	Science and Engineering of Shielded Metal Arc Consumables
Dr. John O. Golden/ Dr. Hugh Murphy	Environmental Institute at Rocky Flats	EG&G Rocky Flats, Inc. (DOE)	$45,936	Administration of Research & Education Consortium
Dr. Gary L. Baughman	Energy and Minerals Field Institute	National Renewable Energy Laboratory (DOE)	$ 7,500	1994 Energy and Minerals Field Institute
Dr. Gary L. Baughman	Special Programs and Continuing Education	Rocky Flats Local Impacts Initiative (DOE)	$ 25,000	Rocky Flats Local Impacts Initiative
Dr. Robin Murphy	Mathematical and Computer Sciences	National Science Foundation	$ 4,000*	Reactive Sensing for Autonomous Mobile Robots
Ms. Mary Mittag-Miller	Administration	U.S. Geological Survey	$ 3,800*	Data Entry Services Branch of Global Seismology and Geomagnatism National Earthquake Information Services
Dr. Jim Ely	Chemical Engineering and Petroleum Refining	Department of Energy	$112,753*	Composition Dependence of Fluid Thermophysical Properties: Theory and Modeling
Dr. Levent Ozdemir	Excavation Engineering & Earth Mechanics Institute/MN	Neil and Associates, Inc.	$ 6,000	Mining Technology Development, Western Mining, Australia
Dr. Helen Dawson	Environmental Science and Engineering	KN Energy, Inc.	$ 8,000	Solar Energy Soil Remediation

NEW SPONSORED PROJECTS AWARDS
AUGUST 1994 (con't)

Principal Investigator(s)	Department	Sponsor	Amount	Title
Dr. John Steele	Engineering	Arizona State University (NSF)	$ 1,519	Strain Sensing in Polymer Composites and Proportion Gripper for TeleRobotic
Dr. Mark Linne	Engineering	University of Colorado (NASA)	10,707	Proposal on Three Dimensional Flow in a Microgravity Diffusion Flame
Dr. Robert Knecht	Chemical Engineering and Petroleum Refining	National Renewable Energy Laboratory (DOE)	$ 58,406	Investigation of Chemical and Physical Mechanisms for the Nylon Fluid-Bed Process
Dr. John B. Curtis	Institute for Energy Resources Studies/ GGE	U.S. Geological Survey	$ 38,309	Organic Geochemistry in Petroleum Resource Assessment
Dr. Gary L. Baughman	Energy and Minerals Field Institute	Office of Surface Mining	$ 10,000	Seventeenth Field Institute on Energy and Minerals Opportunities, Problems and Policy Issues, 1994
Ms. Marsha Barber	Special Programs and Continuing Education	BDM-Oklahoma, Inc. (DOE)	$ 94,516	Denver Earth Science Project
Dr. Bruce Honeyman	Environmental Science and Engineering	Sandia National Laboratories (DOE)	$ 30,193*	Scientific and Technical Reviews of Research and Development Work on a Model for Predicting Actinide Concentrations in WIPP Brines
Dr. Wendy J. Harrison/ Dr. Thomas Wildeman	Geology and Geological Engineering/CGC	National Science Foundation	$ 64,830	Acquisition of an Inductively-Coupled Plasma Atomic Emission Spectrometer for the Geochemistry Program
Mr. Dean Rathe	Administration	Department of Education	$ 174,590	Student Support Services Program for Disadvantaged Students

Principal Investigator(s)	Department	Sponsor	Amount	Title
Dr. Linda A. Figueroa	Environmental Science and Engineering	National Science Foundation	$ 28,922	Research Initiation Award: Removal of U(IV) From Aqueous Solution by Sulfate Reducing Bacteria
Dr. Robert C. Hansen	Geophysics	Consortium Mobil Explor. Prod. Petrobras	$ 50,000	Gravity and Magnetics Project
Dr. Dennis W. Readey	Colorado Center for Advanced Ceramics/ MME	Golden Technologies Company, Inc.	$ 11,762	Preparation of Porous Aluminum Oxide
Dr. J. Thomas McKinnon	Chemical Engineering and Petroleum Refining	National Science Foundation	$ 71,787*	Mechanisms of Fullerene Synthesis in Flames
Ms. Kathleen Anderson	Mineral Economics	Environmental Protection Agency	$ 16,000*	Development and Distribution of Case Studies Regarding Application of Best Management Practices
Dr. Robert M. Baldwin/ Dr. Michael S. Graboski	Colorado Institute for Fuels and High Altitude Engine Research/CEPR	Environmental Protection Agency	$349,555	Measurement of High Altitude Heavy Duty Engine Emissions
Dr. Robert M. Baldwin/ Dr. Michael S. Graboski	Colorado Institute for Fuels and High Altitude Engine Research/CEPR	Environmental Protection Agency	$150,445	Measurement of High Altitude Heavy Duty Engine Emissions
Mr. Tim VanHaverbeke	Environmental Science and Engineering	EG&G Rocky Flats, Inc. (DOE)	$107,517*	Environmental Science and Engineering Division and EG&G Rocky Flats Environmental Science Training Program
Dr. Norman Bleistein, et al.	Center for Wave Phenomena/MCS	Consortium Oryx Energy Company Conoco	$ 52,500*	Center for Wave Phenomena
Dr. Thomas L. Davis	Geophysics	Consortium Alberta Energy Company Conoco China National Petro. Co. Japan National Oil Corp.	$ 92,500*	Reservoir Characterization Project: Phase V
Dr. Chidi Chidambaram/ Dr. Glen R. Edwards	Center for Welding and Joining Research/ MME	GE Aircraft Engines (NASA)	$ 61,578	Hydrogen Cracking Susceptibility in Cast Gamma-Titanium Aluminides

*Continuations

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II-e
Presented by Carter/Deits

Subject: Financial-Monthly Reports

Background Information:

Action Motion Requested:

Information Only

CURRENT FUNDS REVENUES, EXPENDITURES, AND OTHER CHANGES

For the Two Months Ending August 31, 1994

(in thousands of dollars)

	STATE APPROPRIATED FUNDING		*AUXILIARY AND SELF FUNDED ACTIVITIES*		*CURRENT RESTRICTED FUNDS*		*TOTAL CURRENT FUNDS*	
	Budget	*Actual*	*Budget*	*Actual*	*Budget*	*Actual*	*Budget*	**Actual**
REVENUES								
Tuition and fees	19,087	10,091					19,087	10,091
State appropriations	13,298	2,216			1,031	560	14,329	2,776
Federal grants and contracts					8,125	1,783	8,125	1,783
State grants and contracts					952	220	952	220
Private gifts, grants, and contracts					5,000	1,259	5,000	1,259
Indirect cost recovery	3,240	674					3,240	674
Colorado School of Mines Foundation					4,177	980	4,177	980
Sales and services of educational activities	202	45					202	45
Sales and services of auxiliary activities			6,833	1,749			6,833	1,749
Other revenue	210	32				0	210	32
Total Revenues	36,037	13,058	6,833	1,749	19,285	4,802	62,155	19,609
EXPENDITURES AND MANDATORY TRANSFERS								
Educational and general								
Instruction	17,853	787	1,589	287	3,421	272	22,863	1,346
Research	1,238	62		0	11,435	3,277	12,673	3,339
Public service	0	0		0	210	121	210	121
Academic support	2,738	1,021	3	(1)	145	46	2,886	1,066
Student services	1,323	297	595	70	172	27	2,090	394
Institutional support	5,620	943	0	0	366	0	5,986	943
Operation and maintenance of plant	4,654	724		0	2	0	4,656	724
Scholarships and fellowships	2,550	1,652		0	3,450	996	6,000	2,648
Educational and General Expenditures	35,976	5,486	2,187	356	19,201	4,739	57,364	10,581
Mandatory transfers for:								
Principal and interest	0	0			72	50	72	50
Loan fund matching grant					12	13	12	13
Total Educational and General	35,976	5,486	2,187	356	19,285	4,802	57,448	10,644
Auxiliary enterprises								
Expenditures			3,916	295			3,916	295
Mandatory transfers for:								
Principal and interest			730	0			730	0
Renewal and replacements			0				0	0
Total Auxiliary Enterprises			4,646	295			4,646	295
Total Expenditures and Mandatory Transfers *	35,976	5,486	6,833	651	19,285	4,802	62,094	10,939
OTHER TRANSFER AND ADDITIONS (DEDUCTIONS)								
Excess of restricted receipts over transfers to revenues						0		0
Interfund transfers	(61)	(61)						(61)
Net Increase	0	7,511		1,098		0		8,609
Beginning Fund Balance	316	316	684	684	2,172	2,172	3,172	3,172
Ending Balance Available	316	7,827	684	1,782	2,172	2,172	3,172	11,781

* Includes $1,912 in budgeted departmental prior year roll forwards.

Report #1A
Prepared:September 1,

COLORADO SCHOOL OF MINES
STATE APPROPRIATED FUNDING
REVENUES, EXPENDITURES, AND OTHER CHANGES
PROJECTED JUNE 30, 1994
(in thousands of dollars)

	(A)	(B)	(C)	(A-C)	(A-C)/A
	Fiscal Budget	Actual Aug-94	Estimated Year-end	Variance $	%
REVENUES					
Tuition and fees	19,087	10,091	19,299	212	1%
State appropriations	13,298	2,216	13,298	0	0%
Indirect Cost Recovery	3,240	674	2,900	(340)	-10%
Sales and services of educational activities	202	45	202	0	0%
Other revenue	210	32	210	0	0%
Total Revenues	36,037	13,058	35,909	(128)	0%
EXPENDITURES AND MANDATORY TRANSFERS					
Educational and general					
Instruction	17,853	787	17,853	0	0%
Research	1,238	62	1,238	0	0%
Public service	0	0	0	0	
Academic support	2,738	1,021	2,738	0	0%
Student services	1,323	297	1,323	0	0%
Institutional support	5,620	943	5,000	620	
Operation and maintenance of plant	4,654	724	4,654	0	
Scholarships and fellowships	2,550	1,652	2,550	0	0%
Educational and General Expenditures	35,976	5,486	35,356	620	2%
Mandatory transfers for:					
Principal and interest	0			0	
Work Study Share					
Loan fund matching grant					
Total Expenditures and Mandatory Transfers *	35,976	5,486	35,356	620	2%
OTHER TRANSFER					
Interfund transfers: Addition/(Deduction)	(61)	(61)	(61)	0	
Net Increase	0	7,511	492	492	
Beginning Fund Balance	316	316	316	316	
Ending Balance Available	316	7,827	808	808	

* Excludes $1,912 in budgeted departmental prior year roll forwards

COLORADO SCHOOL OF MINES
AUXILIARY AND SELF-FUNDED ACTIVITIES
FOR THE TWO MONTHS ENDING AUGUST 31, 1994

	Fiscal Budget	Actual Aug-94	Estimated year-end	Variance $	Variance %	Prior year Actual
ALL AUXILIARY AND SELF-FUNDED						
Revenues	$6,103,000	**2,058,583**	6,103,000	0	0%	7,280,790
Expenditures	(6,056,909)	**(492,230)**	(6,056,909)	0	0%	(6,168,784)
Transfers	(730,000)	**0**	(730,000)	0	0%	(667,690)
Beginning fund balance	683,909	**683,909**	683,909	0	0%	239,593
Ending fund balance	0	**2,250,262**	0	0	0%	683,909
HOUSING SYSTEM						
Revenues	$3,607,550	**1,525,770**	3,607,550	0	0%	3,444,488
Expenditures	(2,928,365)	**(398,698)**	(2,928,365)	0	0%	(2,787,232)
Transfers	(730,000)	**0**	(730,000)	0	0%	(651,730)
Beginning fund balance	50,815	**48,425**	48,425	2,390	5%	42,899
Ending fund balance	0	**1,175,497**	(2,390)	2,390	5%	48,425
STUDENT HEALTH CENTER						
Revenues	168,273	**95,737**	168,273	0	0%	170,963
Expenditures	(160,749)	**(12,248)**	(160,749)	0	0%	(183,405)
Beginning fund balance	(7,523)	**(7,360)**	(7,360)	(163)	2%	5,082
Ending fund balance	1	**76,129**	164	(163)	2%	(7,360)
ATHLETIC ASSOCIATION						
Revenues	191,327	**110,305**	191,327	0	0%	283,110
Expenditures	(322,772)	**(50,846)**	(322,772)	0	0%	(280,491)
Beginning fund balance	131,445	**144,055**	144,055	(12,610)	-10%	141,436
Ending fund balance	0	**203,514**	12,610	(12,610)	-10%	144,055
ASSOCIATED STUDENTS						
Revenues	278,006	**112,162**	278,006	0	0%	295,006
Expenditures	(350,458)	**(8,618)**	(350,458)	0	0%	(244,534)
Beginning fund balance	72,452	**79,125**	79,125	(6,673)	-9%	28,653
Ending fund balance	0	**182,669**	6,673	(6,673)	-9%	79,125
PUBLICATIONS						
Revenues	8,600	**803**	8,600	0	0%	14,530
Expenditures	230,286	**(19,707)**	175,000	55,286	24%	(132,444)
Beginning fund balance	(238,886)	**(238,886)**	(238,886)	0	0%	(120,972)
Ending fund balance	0	**(257,790)**	(55,286)	55,286	24%	(238,886)
CONTINUING EDUCATION						
Revenues	1,980,000	**282,157**	1,980,000	0	0%	1,409,546
Expenditures	(1,980,000)	**(256,874)**	(1,980,000)	0	0%	(1,577,585)
Transfers	0	**0**	0	0	0%	126,224
Beginning fund balance	418,787	**413,494**	413,494	5,293	1%	455,309
Ending fund balance	418,787	**438,777**	413,494	5,293	1%	413,494
CENTRAL SERVICES						
Revenues	100,480	**9,033**	100,480	0	0%	94,975
Expenditures	(226,086)	**92,531**	(226,086)	0	0%	(31,734)
Transfers	0	**0**	0			
Beginning fund balance	125,606	**125,606**	125,606	0	0%	62,365
Ending fund balance	0	**227,170**	0	0	0%	125,606
GREEN CENTER						
Revenues	103,000	**8,405**	103,000	0	0%	99,719
Expenditures	(125,614)	**(12,128)**	(125,614)	0	0%	(101,887)
Beginning fund balance	22,614	**22,412**	22,412	202	1%	24,580
Ending fund balance	0	**18,689**	(202)	202	1%	22,412
PARKING						
Revenues	83,500	**36,902**	83,500	0	0%	86,265
Expenditures	(161,189)	**6,131**	(161,189)	0	0%	(28,960)
Beginning fund balance	77,689	**77,689**	77,689	0	0%	20,384
Ending fund balance	0	**120,722**	0	0	0%	77,689
INTERNATIONAL GROUND WATER						
Revenues	270,000	**18,037**	270,000	0	0%	165,156
Expenditures	(356,065)	**(23,375)**	(356,065)	0	0%	(20,827)
Beginning fund balance	86,065	**86,065**	86,065	0	0%	(58,264)
Ending fund balance	0	**80,727**	0	0	0%	86,065

COLORADO SCHOOL OF MINES

FINANCIAL STATEMENTS

FOR THE YEAR ENDING JUNE 30, 1994

TENTATIVE DRAFT
FOR DISCUSSION PURPOSES ONLY

COLORADO SCHOOL OF MINES
BALANCE SHEET

YEARS ENDED JUNE 30, 1994 AND 1993

	CURRENT FUNDS			
ASSETS:	STATE APPROPRIATED	AUXILIARY & SELF-FUNDED ACTIVITY	RESTRICTED	STUDENT LOAN FUNDS
CASH AND TIME DEPOSITS	$1,351,944	$956,127	$8,839	
CASH WITH STATE TREASURER		402,188		$220,927
SPENDING AUTHORITY				
INVESTMENTS				122,000
ACCOUNTS RECEIVABLE	1,146,803	259,505	3,392,991	27,131
(LESS ALLOWANCE)				
LOANS RECEIVABLE				4,942,582
(LESS ALLOWANCE)				
ACCRUED INTEREST		16,827		
INVENTORIES	158,334	12,168		
PREPAID EXPENSE	17,900	12,211	80,353	
PREPAID PAYROLL EXPENSE	274,040			
CONSTRUCTION IN PROGRESS				
LAND AND IMPROVEMENTS				
BUILDINGS				
EQUIPMENT				
LIBRARY BOOKS				
TOTAL ASSETS	$2,949,021	$1,659,027	$3,482,184	$5,312,641
LIABILITIES:				
VOUCHERS PAYABLE	201,582	71,789	131,972	
DUE TO STATE TREASURER	$638,706		1,166,839	
ACCRUED LIABILITIES	1,078,879		2,659	1,596,443
DEPOSITS HELD FOR OTHERS	31,480	100,913	8,839	
DEFERRED REVENUE	681,705	45,564		
ACCRUED COMP ABSENCES	1,759,817	129,584		
LIFE INCOME PAYABLE				
CONSTRUCTION RETAINAGE				
LEASE OBLIGATION				
BONDS PAYABLE				
TOTAL LIABILITIES	4,392,170	347,850	1,310,309	1,596,443
FUND BALANCES:				
U.S. GRANTS REFUNDABLE				2,326,152
RESTRICTED			2,171,875	
UNRESTRICTED	316,651	1,311,177		
DESIGNATED:				
CSM FOUNDATION				704,498
LOAN FUNDS				685,547
ENDOWMENT				
QUASI-ENDOWMENT				
LIFE INCOME PAYABLE				
NET INVESTMENT IN PLANT				
COMPENSATED ABSENCES	(1,759,799)			
TOTAL FUND BALANCES	(1,443,149)	1,311,177	2,171,875	3,716,197
TOTAL LIABILITIES AND FUND BALANCE	$2,949,021	$1,659,027	$3,482,184	$5,312,640

ENDOWMENT AND SIMILAR FUNDS	PLANT FUNDS: UNEXPENDED	PLANT FUNDS: RENEWAL AND REPLACEMENT	PLANT FUNDS: RETIREMENT OF INDEBTEDNESS	PLANT FUNDS: INVESTMENT IN PLANT	FISCAL YEAR 1994 TOTAL	FISCAL YEAR 1993 TOTAL
$100,000	$4,099,000	$1,195,693	$248,082		$7,959,685	$2,731,000
	180,082				803,197	584,000
	609,425				609,425	37,000
3,520,532					3,642,532	3,607,000
					4,826,432	5,801,000
					4,942,582	4,327,000
10,322	22,588	1,997	514		52,248	9,000
					170,502	224,000
					110,464	54,000
					274,040	0
	19,607,806				19,607,806	16,042,000
				4,371,529	4,371,529	3,808,000
				45,100,327	45,100,327	38,414,000
				22,585,318	22,585,318	25,196,000
				12,438,964	12,438,964	11,808,000
$3,630,854	$24,518,900	$1,197,690	$248,596	$84,496,138	$127,495,051	$112,642,000
36,812	20,051				462,206	483,000
67,582					1,873,127	2,999,000
			45,670		2,723,651	2,136,000
					141,232	74,000
					727,269	558,000
					1,889,401	1,280,000
51,985					51,985	70,000
	609,425				609,425	37,000
				144,315	144,315	214,000
	4,092,048			6,105,711	10,197,759	5,639,000
156,379	4,721,524	0	45,670	6,250,026	18,820,370	13,490,000
					$2,326,152	1,977,000
	19,797,376	1,197,690	202,926		23,369,867	19,144,000
					1,627,827	453,000
					704,498	816,000
					685,547	840,000
435,486					435,486	420,000
2,342,401					2,342,401	2,743,000
696,589					696,589	666,000
				78,246,112	78,246,112	73,373,000
					(1,759,799)	(1,280,000)
3,474,476	19,797,376	1,197,690	202,926	78,246,112	108,674,680	99,152,000
$3,630,855	$24,518,900	$1,197,690	$248,596	$84,496,138	$127,495,050	$112,642,000

COLORADO SCHOOL OF MINES
STATEMENT IN CHANGES IN FUND BALANCES
FOR THE YEAR ENDED JUNE 30, 1994

	STATE APPROPRIATED FUNDING	AUXILIARY AND SELF-FUNDED ACTIVITIES	CURRENT RESTRICTED FUNDS	LOAN FUNDS
REVENUE AND OTHER ADDITIONS				
UNRESTRICTED CURRENT FUND REVENUES	$33,428,807	$7,280,790		
STATE APPROPRIATIONS RESTRICTED			$1,031,043	
FEDERAL GRANTS AND CONTRACTS RESTRICTED			9,101,138	
STATE GRANTS AND CONTRACTS RESTRICTED			1,071,267	
PRIVATE GIFTS, GRANTS AND CONTRACTS RESTRICTED			10,902,441	$58,560
INVESTMENT INCOME RESTRICTED				50
REALIZED GAIN ON INVESTMENT				
INCOME ON LOAN RECEIVABLE				125,035
U.S. GOVERNMENT ADVANCES				72,069
ADDITIONS TO PLANT FACILITIES				
RETIREMENT OF INDEBTEDNESS				
OTHER REVENUE				3,072
TOTAL REVENUE AND OTHER ADDITIONS	33,428,807	7,280,790	22,105,889	258,786
EXPENDITURES AND OTHER DEDUCTIONS				
EDUCATIONAL AND GENERAL EXPENDITURES	33,177,419		19,143,474	
AUXILIARY ENTERPRISE EXPENDITURES		6,103,408		
INDIRECT COST RECOVERED			2,833,770	
LIFE INCOME DISTRIBUTION				
LOAN CANCELLATIONS AND WRITEOFFS				40,450
ADMINISTRATION AND COLLECTION COSTS				92,315
REFUND TO GRANTOR				69,171
EXPENDED FOR PLANT FACILITIES				
RETIREMENT OF INDEBTEDNESS				
INTEREST ON INDEBTEDNESS				
DISPOSAL OF PLANT FACILITIES				
LOSS ON SALE OF INVESTMENTS				
LOSS ON RETIREMENT OF DEBT				
OTHER FUND DEDUCTIONS				
TOTAL EXPENDITURES AND OTHER DEDUCTIONS	33,177,419	6,103,408	21,977,244	201,936
TRANSFERS AMONG FUNDS ADDITIONS/(DEDUCTIONS)				
MANDATORY:				
PRINCIPAL AND INTEREST	(7,902)	(556,829)	(74,057)	
RENEWAL AND REPLACEMENT		(422,208)		
LOAN FUND MATCHING			(12,718)	12,718
INTERFUND TRANSFERS	(619,524)	311,347	(115,467)	13,800
TOTAL TRANSFERS	(627,426)	(667,690)	(202,241)	26,518
NET INCREASE/(DECREASE) FOR THE YEAR	(376,038)	509,692	(73,596)	83,368
FUND BALANCE AT BEGINNING OF YEAR	(1,067,110)	801,485	2,245,531	3,632,830
FUND BALANCE AT END OF YEAR	($1,443,149)	$1,311,177	$2,171,935	$3,716,198

ENDOWMENT AND SIMILAR	UNEXPENDED	RENEWAL AND REPLACEMENT	RETIREMENT OF INDEBTEDNESS	INVESTMENT IN PLANT
	$7,880,885			
$10,000				
73,882				
48,304				
				$9,219,196
				414,396
	111,737	$26,064		
132,186	7,992,621	26,064		9,633,592
72,008				
5,196				
	4,843,848			
			391,941	6,724
	112,663		496,544	
				5,802,996
			589,491	(331,221)
250,000				72,268
327,203	4,956,511	0	1,477,977	5,550,767
	119,615		519,172	
		422,208		
(159,199)	569,510	(140,187)	139,780	
(159,199)	689,125	282,021	658,953	0
(354,216)	3,725,235	308,085	(819,024)	4,082,825
3,828,692	16,072,141	889,605	1,021,950	73,373,073
$3,474,476	$19,797,376	$1,197,690	$202,926	$77,455,898

COLORADO SCHOOL OF MINES
STATEMENT OF CURRENT FUND REVENUES EXPENDITURES AND OTHER CHANGES
Years ended June 30, 1994 and 1993

	1994				1993
	STATE APPROPRIATED FUNDS	AUXILIARY & SELF FUNDED ACTIVITIES	RESTRICTED FUNDS	TOTAL	TOTAL
REVENUES					
STUDENT TUITION AND FEES	$17,930,317	$2,471,198		$20,401,516	$18,421,398
STATE APPROPRIATIONS	12,158,618		$1,031,043	13,189,661	12,567,547
INDIRECT COST RECOVERY	2,846,015		(2,833,770)	12,245	2,943,233
FEDERAL GRANTS ANS CONTRACTS			9,101,138	9,101,138	7,110,749
STATE GRANTS AND CONTRACTS			1,071,267	1,071,267	1,418,020
PRIVATE GIFTS, GRANTS AND CONTRACTS	5,895	22,964	10,902,441	10,931,300	9,594,523
SALES OF EDUCATIONAL ACTIVITIES	487,961			487,961	667,761
AUXILIARY OPERATING REVENUE		4,764,880		4,764,880	4,231,762
OTHER REVENUE		21,748		21,748	64,927
TOTAL REVENUE	33,428,807	7,280,790	19,272,119	59,981,716	57,019,920
EXPENDITURES					
EDUCATIONAL AND GENERAL					
INSTRUCTION	16,374,074	1,589,242	3,421,898	21,385,214	20,105,454
RESEARCH	984,286	743	11,435,300	12,420,328	12,035,644
PUBLIC SERVICE	2,260		149,440	151,701	149,989
ACADEMIC SUPPORT	2,732,150	2,849	145,507	2,880,506	3,537,747
STUDENT SERVICES	1,510,400	596,243	171,855	2,277,498	1,848,313
INSTITUTIONAL SUPPORT	4,650,681	(561)	366,858	5,016,978	5,015,295
OPERATION AND MAINTANCE OF PLANT	4,045,405		1,768	4,047,174	4,645,983
SCHOLARSHIP AND FELLOWSHIPS	2,878,163	0	3,450,847	6,329,010	6,019,333
AUXILIARY OPERATING EXPENDITURES		3,915,893		3,915,893	3,579,647
TOTAL EXPENDITURES	33,177,419	6,103,408	19,143,474	58,424,302	56,937,405
TRANSFERS BETWEEN FUNDS -- (additions)/deductions					
MANDATORY TRANSFERS FOR					
PRINCIPAL AND INTEREST	7,902	556,829	74,057	638,787	925,668
RENEWAL AND REPLACEMENT		422,208		422,208	122,586
LOAN FUND MATCH			12,718	12,718	8,000
TOTAL MANDATORY TRANSFERS	7,902	979,037	86,775	1,073,713	1,056,254
VOLUNTARY TRANSFERS					
AND OTHER (ADDITIONS)/DEDUCTIONS					
RESTRICTED RECEIPTS TO BE EXPENDED IN FUTURE YEARS					(165,377)
INTERFUND TRANSFERS	619,524	(311,347)	115,527	423,704	(235,536)
TOTAL VOLUNTARY TRANSFERS	619,524	(311,347)	115,527	423,704	(400,913)
TOTAL EXPENDITURES, TRANSFERS AND OTHER DEDUCTIONS	33,804,845	6,771,098	19,345,775	59,921,719	57,592,745
NET INCREASE/(DECREASE) IN FUND BALANCE	($376,038)	$509,692	($73,656)	$59,997	($572,825)

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II-f
Presented by MacPherson

Subject: Safety Report

Background Information:

Action Motion Requested:

Information Only

ENVIRONMENTAL HEALTH AND SAFETY (EHS) REPORT

For the Months of June, July and August 1994
Submitted by: R. A. MacPherson, Director, EHS

I. HAZARDOUS WASTE AND RECYCLING

1. Waste Collection, Storage and Disposal: 2589 Kg of hazardous waste were collected during the three month period. 897 Kg of hazardous waste remained in storage at the end of August. 3145 Kg of hazardous waste were shipped for disposal during the three month period.

2. Recycling: Collection rates for recyclable materials were as follows:

Material	June	July	August	Calendar Year Total
White Office Paper	975 Kg	2104 Kg	---- Kg	8798 Kg
Newspaper	392 Kg	1001 Kg	---- Kg	7471 Kg
Computer Paper	102 Kg	455 Kg	---- Kg	3369 Kg
Aluminum	9 Kg	14 Kg	---- Kg	311 Kg

II. ENVIRONMENTAL HEALTH AND SAFETY ISSUES

1. Central Chemical Storage and Distribution Facility: Construction of the new facility is nearing completion. EHS personnel are in the process of inventorying all chemicals which have been transferred to the new facility from the old chemistry stockroom. Each chemical container has been bar coded in order to improve inventory and tracking efficiency. Information on each item in the inventory is also being loaded into a chemical inventory data base. The data base will eventually enable the School to track the disposition of each regulated material which enters service on the campus.

2. Sanitary Sewer Monitoring: Monitoring of campus sewer effluent from December 1993 to May 1994 demonstrated consistent compliance with discharge standards for regulated metals, however, results obtained in June 1994 indicated significant violations for metals discharges in the Hill Hall sewer. Repeat sampling by CSM and by the City confirmed the problem. Mandatory self reporting of the violation prompted a compliance inspection by representatives of the City, Colorado Department of Public Health and Environment (CDPHE) and Coors Waste Water Treatment Plant. Compliance inspectors were in general agreement with School personnel that the cause of the problem is residual contamination in the old plumbing system -- not ongoing dumping of regulated materials in laboratory drains. Despite the general acceptance of this explanation, enforcement agencies will be compelled to issue a Notice of Violation to the School.

3. Legislative Committee Visit: Members of the Capital Development Committee toured the CSMRI work site, Alderson Hall and Hill Hall. Safety problems in Hill Hall were brought to the attention of committee members. These problems will be resolved by the proposed renovation of the building.

4. Coolbaugh Hall Decontamination Project: An extensive asbestos abatement and chemical decontamination project is now underway in the old Coolbaugh building. This work is in preparation for renovation of the old wing.

5. Alarm Monitoring: The School will contract with a private alarm monitoring company to provide 24 hour monitoring of campus fire, security and mechanical trouble alarms. The City is unable to provide this service. Alarm monitoring is required by the Fire Code.

6. Stormwater Discharges: Federal regulations required the implementation of Stormwater Management Plans (SWMP) at inactive mine sites by July 1, 1994. The School owns several inactive mining claims where these regulations apply, including: Experimental Mine; Old Edgar Shaft and Tailings Pile in Huykill Gulch; Rattler Mine in Virginia Canyon; Jo Reynolds Claim(s) in Silver Creek Gulch. All of these sites were inspected by EHS personnel, the Experimental Mine Manager and a civil engineering consultant in June. Stormwater management plans have been implemented as required. Certification of implementation was forwarded to the Colorado Department of Public Health and Environment (CDPHE) prior to the July deadline.

7. Meyer Hall Decontamination: For the past several months, EHS personnel have experimented with different methods to remove low level radioactive contamination from a storage room in Meyer Hall. The decontamination effort has been complicated by the presence of asbestos floor tile in the room. EHS recently initiated a project to remove all asbestos floor tile. A "bead blasting" machine was then used to remove about one eighth inch of the contaminated concrete which underlies the asbestos floor tile. All of this work was done under containment to ensure that asbestos and radioactive particulates were not released. Hazardous Material Manager Wendell Rahorst devised the project methodology, and supervised contractor personnel in accomplishing the work. Initial survey results indicate that most of the radioactive contamination has been successfully removed.

8. Acid Spill: On July 27, 1994 a buildup of gas pressure in a gallon bottle of mixed waste acid caused the bottle to burst. The waste acid was stored in a cabinet in the Physical Metallurgy Laboratory in Hill Hall. A significant amount of concentrated acid was spilled on the floor. The School's Chemical Spill Response Team cleaned up the spill with the

assistance of Metallurgy faculty members. There were no injuries, and damage was minor.

9. Safety Inspections: During the months of June, July and August, safety inspections were conducted in the EMI Lab, the Engine Lab, Berthoud Hall, Morgan Hall, Thomas Hall, Bradford Hall, Randall Hall, Chauvenet Hall, Guggenheim Hall, the Arthur Lakes Library and the Green Center.

III. CSMRI

1. Creekside Projects: Remedial projects at Creekside began on July 1, 1994, upon receipt of $1.81 million appropriated by the State Legislature for this purpose. A field operations office has been established at the site and a full-time crew of three workers has been hired. Wastren Remediation Inc. was awarded the contract for preparing the site for demolition. A tentative schedule of work at the Creekside site is as follows:

9/94	a)	Survey Buildings for Asbestos
	b)	Accomplish Radiological Survey
	c)	Sort and Categorize Drummed Waste
10/94	a)	Commence Asbestos Abatement
	b)	Commence Radiological Decontamination
11/94	a)	Achieve Radiological Free Release Standard
	b)	Complete Asbestos Abatement
	c)	Dispose of Drummed Waste
1/95		Demolish Buildings

2. Table Mountain Research Center (TMRC): Inspection of the industrial sewer system at TMRC revealed the presence of significant concentrations of trichloroethylene (TCE). Continued investigation led to the discovery of a large underground vault which contained several thousand gallons of TCE contaminated sludge. Federal, state and local officials were notified as soon as the vault was discovered. A project to decontaminate drain lines and sumps in the industrial sewer system was immediately initiated. The vault was also excavated and all contaminated sludge was removed. This material has since been disposed as a regulated hazardous waste.

   Although purposeful discharges of waste water through the industrial sewer system have ceased, the system still admits natural flows of ground and surface water which collect in a downgradient sump. Analysis of this water indicates that it is contaminated with TCE. This

suggests that residual TCE remains in the soil around the sewer system. The extent of subsurface contamination is unknown.

The water which collects in the downgradient sump qualifies as a RCRA hazardous waste. Therefore, the contaminated water must not be allowed to overflow into nearby surface waters. In order to prevent off-site release of contaminated water, CSMRI has arranged to pump the water through a carbon filtration system to remove TCE. The treated water is then discharged to a portable holding tank. Recent discussion with the local sanitation district indicates that the district will probably allow the decontaminated water to be discharged in batches from the portable tank to the local sanitary sewer.

The Colorado Department of Public Health and Environment (CDPHE) has been kept fully informed concerning this matter. The original source of TCE contamination appears to be a solvent extraction pilot plant which was built and operated at TMRC by a Canadian company, Brameda Resources Ltd., from 1968 to 1971.

3. Legal Representation: CSM, CDPHE and the Office of the Attorney General are continuing a protracted negotiation concerning acquisition of legal representation for the School in matters pertaining to CSMRI. It is hoped that a full time environmental attorney can be hired in the near future.

4. Negotiation With EPA: CSM, representatives of the State and private PRPs have been involved in a series of meetings with EPA to negotiate terms for resolving the CERCLA "removal action" at CSMRI Creekside. The removal action in 1992 produced a 15,000 cubic yard stockpile of low level radioactive waste. This material must be now permanently disposed. The key question is where to dispose of the material. All parties, including EPA and CDPHE, have agreed to consider on-site disposal as a legitimate remedial alternative. The State recently submitted a proposal to accomplish a scientifically based, cost/benefit assessment of remedial alternatives. Several of the major private PRPs participated with CSM and the State in developing the proposal. EPA's response to the proposal is expected within a few days. EPA's response will be a key element in determining where the waste may be disposed, and what the cost will be for the disposal operation.

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II-g
Presented by Powers

Subject: Institutional Advancement Reports

Background Information:

Action Motion Requested:

Information Only

CSM ADMISSIONS OFFICE
MEMORANDUM

To: Harold Cheuvront
From: Bill Young
Subject: August 15, 1994, Admissions Report for Fall 1994
Date: August 16, 1994

Summary

As of August 15, total applications for fall 1994 were up 5.1 percent over last year. Colorado resident applications were up 1.3 percent, and nonresident applications were up 8.3 percent.

Women

Women were 27.8 percent of the applicants, 28.3 percent of the accepted students, and 23.8 percent of the committed students. For fall 1993, women were 25.3 percent of the applicants, 27.0 percent of the accepted students, and 23.2 percent of the committed students. Complete data for women applicants for previous years are not available.

Minority Students

Minority students were 15.5 percent of the applicants, 14.5 percent of the accepted students, and 18.0 percent of the committed students. For fall 1993, minority students were 15.5 percent of the applicants, 14.0 percent of the accepted students, and 12.5 percent of the committed students. For fall 1994, Colorado minority students were 19.2 percent of the Colorado applicants, 18.0 percent of the accepted Colorado students, and 21.8 percent of the committed Colorado students. Complete data for minority students for previous years are not available.

CCHE Admissions Index

For this report, 9.3 percent of the accepted freshmen and 4.1 percent of the accepted transfer students were in the CCHE Admissions Index Window.

Comments

We've reached our target for committed students. Based on experience, these committed students should yield 600-615 new enrolled students this fall.

BY/by

Attachments

CSM Admissions Report - Total Applications for Fall 1994
August 15, 1994

Applications Received	Freshmen - Resident	Transfer - Resident	Freshmen - NonResident	Transfers - NonResident	Freshmen - Total	Transfers - Total	Total	Year End Total
1994	681	127	883	163	1564	290	1854	
1993	700	98	824	142	1524	240	1764	1,764
1992	637	110	777	130	1414	240	1654	1,656
Applications Accepted								
1994	535	116	694	107	1229	223	1452	
1993	553	71	657	90	1210	161	1371	1,371
1992	532	91	653	100	1185	191	1376	1,377
Applications Withdrawn								
1994	119	15	274	21	393	36	429	
1993	114	11	261	14	375	25	400	404
1992	110	6	203	22	313	28	341	349
Net Accepted								
1994	416	101	420	86	836	187	1023	
1993	439	60	396	76	835	136	971	967
1992	422	85	450	78	872	163	1035	1,027
Committed								
1994	312	87	185	54	497	141	638	
1993	324	52	188	60	512	112	624	627
1992	308	71	209	50	517	121	638	641
Applicants Rejected								
1994	133	6	153	34	286	40	326	
1993	140	15	144	38	284	53	337	337
1992	104	15	106	20	210	35	245	245
Incomplete Applications								
1994	13	5	36	22	49	27	76	
1993	7	12	23	14	30	26	56	56
1992	1	4	18	10	19	14	33	34

CSM Admissions Report - Applications from Women for Fall 1994
August 15, 1994

Applications Received	Freshmen - Resident	Transfer - Resident	Freshmen - NonResident	Transfers - NonResident	Freshmen - Total	Transfers - Total	Total	Year End Total
1994	192	31	252	41	444	72	516	
1993	n/a	n/a	n/a	n/a	n/a	n/a	446	446
1992	n/a	n/a	n/a	n/a	n/a	n/a	415	415
Applications Accepted								
1994	148	28	209	26	357	54	411	
1993	n/a	n/a	n/a	n/a	n/a	n/a	370	370
1992	n/a	n/a	n/a	n/a	n/a	n/a	358	358
Applications Withdrawn								
1994	47	5	87	8	134	13	147	
1993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Accepted								
1994	101	23	122	18	223	41	264	
1993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Committed								
1994	72	20	50	10	122	30	152	
1993	n/a	n/a	n/a	n/a	n/a	n/a	145	146
1992	n/a	n/a	n/a	n/a	n/a	n/a	161	161
Applicants Rejected								
1994	42	3	33	9	75	12	87	
1993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Incomplete Applications								
1994	2	0	10	6	12	6	18	
1993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

CSM Admissions Report - Applications from Minority Students for Fall 1994
August 15, 1994

Applications Received	Freshmen - Resident	Transfer - Resident	Freshmen - NonResident	Transfers - NonResident	Freshmen - Total	Transfers - Total	Total	Year End Total
1994	137	18	123	9	260	27	287	
1993	n/a	n/a	n/a	n/a	n/a	n/a	274	273
1992	n/a	n/a	n/a	n/a	n/a	n/a	253	254
Applications Accepted								
1994	101	16	88	5	189	21	210	
1993	n/a	n/a	n/a	n/a	n/a	n/a	192	191
1992	n/a	n/a	n/a	n/a	n/a	n/a	183	184
Applications Withdrawn								
1994	17	1	36	2	53	3	56	
1993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Accepted								
1994	84	15	52	3	136	18	154	
1993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Committed								
1994	73	14	26	2	99	16	115	
1993	n/a	n/a	n/a	n/a	n/a	n/a	78	73
1992	n/a	n/a	n/a	n/a	n/a	n/a	74	75
Applicants Rejected								
1994	30	1	27	1	57	2	59	
1993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Incomplete Applications								
1994	6	1	8	3	14	4	18	
1993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II-d
Presented by Kidnay

Subject: Sponsored Projects - Incremental Funding (New Agreements and Add-ons) July, 1994, August, 1994

Background Information:

Action Motion Requested:

Information Only

SPONSORED PROJECTS
Incremental Funding
(New Agreements and Amendments)
JULY 1994

Project #	Sponsor	Contract #	Principal Investigator	New Contracts	Amendments
4-49551	ARI (GRI)		Lerud/ADM		37,300
4-49587	Excavation Engineering Assoc., Inc.		Ozdemir/EMI/MN		1,000
4-49590	Akzo-Nobel, Inc.		Eberhart/ MME	45,000	
4-49589	Conoco, Inc.		Mishra/Olson/KROLL/MME	10,000	
4-41346	EG&G Rocky Flats (DOE)	ASC 229543ST4	Moore/Olson/Mishra/KROLL/MME		30,000
4-41424	NSF	CTS-9412178	Linne/EG	76,563	
4-41427	Army	DAAH04-94-G-0281	Olson/CWJR/MME	10,000	
4-41357	EG&G Rocky Flats (DOE)	ASC 343761PA3	VanHaverbeke/ESE		(24,168)
4-41374	DOE	DE-FG02-89ER14079	Larner/GP		(3,000)
4-41426	EPA	CR 822757-01-0	Bunge/CEPR	90,362	
4-41402	Raytheon Services Nevada (DOE)	94YMP0026	Ozdemir/EMI/MN		108,144
4-41403	Raytheon Services Nevada (DOE)	94YMP0026	Ozdemir/EMI/MN		130,261
4-41404	Raytheon Services Nevada (DOE)	94YMP0026	Ozdemir/EMI/MN		54,608
4-41238	NASA	NCC3-215	Moore/MME		60,000
4-41144	NSF	DMR-9158312	Haun/MME		62,500
4-41281	NSF	CTS-9258149	McKinnon/CEPR		62,500
4-41254	NSF	BES-9207967	Chung/EG		63,034
4-41428	CO Dept. of Education (NSF)		Baughman/Trefny/SPACE/PH	72,500	
4-41431	Los Alamos National Laboratory (DOE)	2555K0014-3H	Cook/Figueroa/ESE	146,460	
4-41430	CSU (USGS)	G-2900-6	Harrison/Macalady/GGE/CGC	15,000	
4-49485	Consortium Mobil Research & Development Corp.		Bleistein, et al./CWP/MCS		30,000
4-49592	Golden Technologies Company, Inc.	PO-048370-00	Way/CEPR	1,860	
4-41432	Los Alamos National Laboratory (DOE)	PO 3267M0014-5L	Boyd/GP	6,000	
4-49591	Navistar International Transportation Corp.	PO XC514268M	Graboski/CIFER/CEPR	20,000	
4-41364	NREL (DOE)	XAE-3-13494-01	McKinnon/CEPR		5,000
				$ 493,745	$617,179

FY to Date	Month	Cumulative	Last Year Cumulative
July	$ 1,110,924	$1,110,924	$ 704,762
August			1,737,395
September			2,652,722
October			4,789,625
November			5,807,241
December			6,531,157
January			7,410,309
February			8,625,057
March			9,878,566
April			11,222,564
May			12,035,959
June			14,179,022

NEW SPONSORED PROJECTS AWARDS
JULY 1994

Principal Investigator(s)	Department	Sponsor	Amount	Title
Ms. Joanne V. Lerud	Library	Advanced Resources International, Inc. (GRI)	$ 37,300*	Operate and Improve the Natural Gas Supply Information Centers
Dr. Levent Ozdemir	Excavation Engineering & Earth Mechanics Institute/MN	Excavation Engineering Associates, Inc.	$ 1,000*	Support Thesis Work Involving Mechanical Excavation
Dr. Mark Eberhart	Metallurgical & Materials Engineering	Akzo-Nobel	$ 45,000	Modeling of Carbide Catalysts
Dr. Brajendra Mishra/ Dr. David L. Olson	KROLL Institute for Extractive Metallurgy/MME	Conoco, Inc.	$ 10,000	Effect of Steel Metallurgy on Formation & Physical Characteristics of Iron Carbonate Scale
Dr. John J. Moore/ Dr. David L. Olson/ Dr. Brajendra Mishra	KROLL Institute for Extractive Metallurgy/MME	EG&G Rocky Flats (DOE)	$ 30,000*	Behavior of RCRA Constituents in Pyro-chemical Residue Processing
Dr. Mark Linne	Engineering	National Science Foundation	$ 76,563	Engineering Research Equipment: Picosecond Diagnostics in Reacting Flows Using a Mode-Locked Ti:Sapphire Laser
Dr. David L. Olson	Center for Welding and Joining Research/MME	Army	$ 10,000	High Strength Steel Weldment Reliability
Mr. Tim VanHaverbeke	Environmental Science and Engineering	EG&G Rocky Flats (DOE)	$ (24,168)*	Environmental Science and Engineering Division and EG&G Rocky Flats Environmental Science Training Program
Dr. Kenneth Larner	Geophysics	Department of Energy	$ (3,000)*	Computational Methods for Improving the Resolution of Subsurface Seismic Images

NEW SPONSORED PROJECTS AWARDS
JULY 1994 (con't)

Principal Investigator(s)	Department	Sponsor	Amount	Title
Dr. Annette L. Bunge	Chemical Engineering and Petroleum Refining	Environmental Protection Agency	$ 90,362	Estimating the Absorbed Dose from Dermal Exposure to Environmental Pollutants
Dr. Levent Ozdemir	Excavation Engineering & Earth Mechanics Institute/MN	Raytheon Services Nevada (DOE)	$ 108,144*	Mobile Excavator for Alcoves
Dr. Levent Ozdemir	Excavation Engineering & Earth Mechanics Institute/MN	Raytheon Services Nevada (DOE)	$ 130,261*	Road Header for Alcoves and Main Drifts
Dr. Levent Ozdemir	Excavation Engineering & Earth Mechanics Institute/MN	Raytheon Services Nevada (DOE)	$ 54,608*	Design Reviews and Special Studies
Dr. John J. Moore	Metallurgical & Materials Engineering	National Aeronautics & Space Administration	$ 60,000*	A Fundamental Study of the Combustion Synthesis of Ceramic-Metal Composite Materials Under Microgravity Conditions
Michael J. Haun	Metallurgical & Materials Engineering	National Science Foundation	$ 62,500*	Presidential Young Investigator Award
Dr. J. Thomas McKinnon	Chemical Engineering and Petroleum Refining	National Science Foundation	$ 62,500*	NSF Young Investigator
Dr. Jin S. Chung	Engineering	National Science Foundation	$ 63,034*	Dynamics of a Pipe System for Hardrock Fracturing in Deep-Ocean Floor
Dr. Gary L. Baughman/ Dr. John U. Trefny	Special Programs and Continuing Education/ Physics	Colorado Department of Education (NSF)	$ 72,500	Systemic Reform Efforts in Science and Mathematics Through Standards-Based Educational Programs
Dr. Nevis Cook/ Dr. Linda A. Figueroa	Environmental Science and Engineering	Los Alamos National Laboratory (DOE)	$146,460	Biodenitrification in Sequencing Batch Reactors
Dr. Wendy J. Harrison/ Dr. Donald Macalady	Geology and Geological Engineering/Chemistry and Geochemistry	Colorado State University (USGS)	$ 15,000	Characterization of Iron Transport between an Alluvial Aquifer and a Natural Wetland Impacted by Acid Mine Drainage, Tennessee Park, Leadville, CO

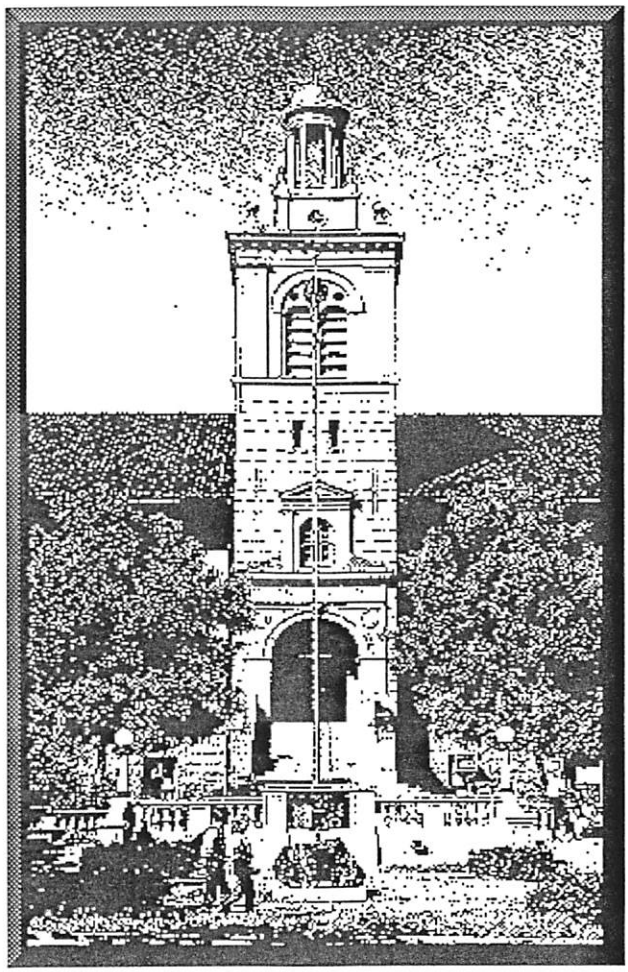
NEW SPONSORED PROJECTS AWARDS
JULY 1994 (Con't.)

Principal Investigator(s)	Department	Sponsor	Amount	Title
Dr. Norman Bleistein, et al.	Center for Wave Phenomena/ MCS	Consortium Mobil Research & Development	$ 30,000*	Center for Wave Phenomena
Dr. J. Douglas Way	Chemical Engineering and Petroleum Refining	Golden Technologies Company, Inc.	$ 1,860	Derivation of a Resistance in Series Model for Water Flux in Asymmetric Ceramic Membranes
Dr. Thomas Boyd	Geophysics	Los Alamos National Laboratory (DOE)	$ 6,000	Collecting Seismic Reflection Data
Dr. Michael S. Graboski	Colorado Institute for Fuels and High Altitude Engine Research/CEPR	Navistar International Transportation Corp.	$ 20,000	Complete Transient Test
Dr. J. Thomas McKinnon	Chemical Engineering and Petroleum Refining	National Renewable Energy Laboratory (DOE)	$ 5,000*	Design of a Photocatalytic Reactor for Oxidation of Organic Material

*Continuations

The Colorado School of Mines

Gifts and Pledges as of August 31, 1994



COLORADO SCHOOL OF MINES
OFFICE OF INSTITUTIONAL ADVANCEMENT
DEVELOPMENT REPORT SUMMARY

Through August 31, 1994

Category of Support	Fiscal 1994 Goal	Year To Date	% Goal	Last Fiscal Year
Total Commitments	$12,000,000	$532,074	4%	$415,056
Total Cash	$12,000,000	$973,084	8%	$882,524
CSM Annual Fund	$1,600,000	$67,770	4%	$84,608
Mines Alumni Fund	$1,000,000	$19,987	2%	$11,340

Note 1. The Post Campaign total of $1,040,822 includes $973,084 received in cash contributions and $67,738 in pledges to be paid. Pledges generally may be honored over as many as five years from the date a pledge is registered.

David L. Powers, Vice President for Institutional Advancement
(303) 273-3152
9/1/94

The Colorado School of Mines
Summary of Cash for Fiscal Year to Date
Cash through August 31, 1994

	Current Unrestricted	Current Restricted	Current Total	Endowment & Similar Unrestricted	Endowment & Similar Restricted	Other Capital Unrestricted	Other Capital Restricted	All Capital Total	GRAND TOTAL
ALUMNI									
This FY	**$14,387**	**$5,600**	**$19,987**	**$0**	**$118,547**	**$0**	**$0**	**$118,547**	**$138,534**
Goal	700,000	300,000	1,000,000	500,000	3,000,000	0	0	3,500,000	4,500,000
% of Goal	**2.1%**	**1.9%**	**2.0%**	**0.0%**	**4.0%**	**0.0%**	**0.0%**	**3.4%**	**3.1%**
Last FY	10,007	1,333	11,340	0	275	0	0	275	11,615
FRIENDS									
This FY	**3,295**	**11,211**	**14,506**	**0**	**88,432**	**0**	**0**	**88,432**	**102,938**
Goal	60,000	180,000	240,000	200,000	500,000	0	0	700,000	940,000
% of Goal	**5.5%**	**6.2%**	**6.0%**	**0.0%**	**17.7%**	**0.0%**	**0.0%**	**12.6%**	**11.0%**
Last FY	2,159	12,246	14,405	0	2,846	0	0	2,846	17,251
MATCHING GIFTS									
This FY	**31,752**	**1,525**	**33,277**	**0**	**5,225**	**0**	**0**	**5,225**	**38,502**
Goal	340,000	20,000	360,000	0	200,000	0	0	200,000	560,000
% of Goal	**9.3%**	**7.6%**	**9.2%**	**0.0%**	**2.6%**	**0.0%**	**0.0%**	**2.6%**	**6.9%**
Last FY	52,138	6,725	58,863	0	5,650	0	0	5,650	64,513
CORPORATIONS									
This FY	**6,912**	**125,283**	**132,195**	**0**	**25,100**	**0**	**305,000**	**330,100**	**462,295**
Goal	85,000	1,800,000	1,885,000	0	600,000	0	1,015,000	1,615,000	3,500,000
% of Goal	**8.1%**	**7.0%**	**7.0%**	**0.0%**	**4.2%**	**0.0%**	**30.0%**	**20.4%**	**13.2%**
Last FY	1,803	326,342	328,145	0	0	0	0	0	328,145
FOUNDATIONS									
This FY	**3,835**	**120,044**	**123,879**	**0**	**106,936**	**0**	**0**	**106,936**	**230,815**
Goal	15,000	1,135,000	1,150,000	0	1,350,000	0	0	1,350,000	2,500,000
% of Goal	**25.6%**	**10.6%**	**10.8%**	**0.0%**	**7.9%**	**0.0%**	**0.0%**	**7.9%**	**9.2%**
Last FY	0	361,000	361,000	0	100,000	0	0	100,000	461,000
TOTAL RAISED									
This FY	**$60,181**	**$263,663**	**$323,844**	**$0**	**$344,240**	**$0**	**$305,000**	**$649,240**	**$973,084**
Goal	1,200,000	3,435,000	4,635,000	700,000	5,650,000	0	1,015,000	7,365,000	12,000,000
% of Goal	**5.0%**	**7.7%**	**7.0%**	**0.0%**	**6.1%**	**0.0%**	**30.0%**	**8.8%**	**8.1%**
Last FY	66,107	707,646	773,753	0	108,771	0	0	108,771	882,524

The Colorado School of Mines
Summary of Commitments for Current Fiscal Year
Commitments through August 31, 1994

	Current Unrestricted	Current Restricted	Current Total	Endowment & Similar Unrestricted	Endowment & Similar Restricted	Other Capital Unrestricted	Other Capital Restricted	All Capital Total	GRAND TOTAL
ALUMNI									
This FY	**$8,435**	**$550**	**$8,985**	**$0**	**$30,975**	**$0**	**$0**	**$30,975**	**$39,960**
Goal	700,000	300,000	1,000,000	500,000	4,000,000	0	0	4,500,000	5,500,000
% of Goal	**1.2%**	**0.2%**	**0.9%**	**0.0%**	**0.8%**	**0.0%**	**0.0%**	**0.7%**	**0.7%**
Donors	28	7	35	0	11	0	0	11	46
Last FY	5,930	1,350	7,280	0	75	0	0	75	7,355
FRIENDS									
This FY	**3,123**	**6,294**	**9,417**	**0**	**905**	**0**	**0**	**905**	**10,322**
Goal	60,000	180,000	240,000	0	300,000	0	0	300,000	540,000
% of Goal	**5.2%**	**3.5%**	**3.9%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.3%**	**1.9%**
Donors	23	5	28	0	15	0	0	15	43
Last FY	1,399	460	1,859	0	2,600	0	0	2,600	4,459
MATCHING GIFTS									
This FY	**4,032**	**50**	**4,082**	**0**	**10,100**	**0**	**0**	**10,100**	**14,182**
Goal	340,000	20,000	360,000	100,000	100,000	0	0	200,000	560,000
% of Goal	**1.2%**	**0.3%**	**1.1%**	**0.0%**	**10.1%**	**0.0%**	**0.0%**	**5.1%**	**2.5%**
Donors	20	1	21	0	3	0	0	3	24
Last FY	6,410	1,700	8,110	0	0	0	0	0	8,110
CORPORATIONS									
This FY	**6,912**	**84,783**	**91,695**	**0**	**25,100**	**0**	**305,000**	**330,100**	**421,795**
Goal	85,000	1,800,000	1,885,000	0	1,400,000	0	1,015,000	2,415,000	4,300,000
% of Goal	**8.1%**	**4.7%**	**4.9%**	**0.0%**	**1.8%**	**0.0%**	**30.0%**	**13.7%**	**9.8%**
Donors	8	12	20	0	2	0	2	4	24
Last FY	1,790	383,342	385,132	0	0	0	0	0	385,132
FOUNDATIONS									
This FY	**3,835**	**35,044**	**38,879**	**0**	**6,936**	**0**	**0**	**6,936**	**45,815**
Goal	15,000	900,000	915,000	0	185,000	0	0	185,000	1,100,000
% of Goal	**25.6%**	**3.9%**	**4.2%**	**0.0%**	**3.7%**	**0.0%**	**0.0%**	**3.7%**	**4.2%**
Donors	1	8	9	0	2	0	0	2	11
Last FY	0	10,000	10,000	0	0	0	0	0	10,000
TOTAL RAISED									
This FY	**$26,337**	**$126,721**	**$153,058**	**$0**	**$74,016**	**$0**	**$305,000**	**$379,016**	**$532,074**
Goal	1,200,000	3,200,000	4,400,000	600,000	5,985,000	0	1,015,000	7,600,000	12,000,000
% of Goal	**2.2%**	**4.0%**	**3.5%**	**0.0%**	**1.2%**	**0.0%**	**30.0%**	**5.0%**	**4.4%**
Donors	80	33	113	0	33	0	2	35	148
Last FY	15,529	396,852	412,381	0	2,675	0	0	2,675	415,056

RESOURCES

THE CAMPAIGN FOR CSM

MEMORANDUM

September 9, 1994

To: The Board of Trustees

From: David L. Powers
Vice President for Institutional Advancement

Re: RESOURCES: The Campaign for CSM, 1989-94 - a final memorandum.

The achievement of the RESOURCES Campaign, $72,784,990 against a goal of $60,000,000, speaks for itself as an expression of loyalty, encouragement and a belief in the School's leadership and future.

A report covering the background and purposes of this extraordinary effort, one that records what has been accomplished, will be mailed to all alumni and other friends by the end of September.

A few highlights from that report:

Summing It Up:

- Eight thousand donors contributed over the five-year period.
- Alumni provided the largest single source of support - more than $22.5 million in gifts and pledges.
- Fifty-four percent of the School's alumni participated over the five years.
- Corporations and private foundations together gave more than $37.5 million.
- Approximately 100 alumni, faculty and staff and other friends volunteered their time and effort on various committees.
- More than 31 percent of the faculty, staff and retirees (41 percent of full-time faculty) contributed $457,159 to the campus campaign.

The Record of Achievement:

- $40,135,500 was raised for endowment, including:
  - $12,596,670 toward faculty chairs and $4,405,245 for professorships.
  - Endowed scholarships and fellowships totaled $6,822,722.
  - Library endowment reached $1,220,000.
  - $15,090,813 was given for general and for program endowment, including funds that may be invested in a variety of future needs.
- $23,289,325 was raised for academic and program support:
  - $1,176,833 for faculty development.
  - $7,423,385 toward undergraduate and graduate laboratories.
  - $1,843,000 for computing resources.
  - $523,962 toward operating needs for the Lakes Library.

What Did the Campaign Achieve?

- Twelve new endowed faculty chairs and professorships.
- Twenty new endowed scholarships.
- More than $6 million to establish the Center for Geoscience Computing.

The Net Effect:

- Mines is better positioned to address the challenges of the next few years.
- The Annual Giving program has shown a healthy growth.
- Increasingly there are alumni willing to commit time by serving as volunteers in service to the School.
- National and international external audiences have gained an enhanced esteem for Mines.
- Beyond a doubt, there are alumni and friends ready to invest in the future excellence of Colorado School of Mines - a feeling of pride has been reinforced.

DLP/pab

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II (h)
Presented by Deits

Subject:

1995-96 Budget Request Narrative

Background Information:

Each October the Governing Boards of Colorado Public Higher Education institutions prepare a Budget Request document for General Fund support for the next fiscal year. The Colorado Commission on Higher Education (CCHE) coordinates the higher education system request. The CCHE must forward the system request to the Joint Budget Committee no later than November 1 of each year.

Funding for fiscal year 1995-1996 will be based on the following areas: mandated costs, the enrollment planning recommendations, and the five policy areas.

Mandated costs include salary and benefit increases for faculty and classified staff, premiums for risk management and workers compensation, statewide indirect cost recoveries, and increased operating and utility costs for new state-funded buildings (for CSM, this includes the additions to Coolbaugh Hall and Alderson Hall.) We will be requesting funding from tuition and general fund to support mandated costs.

The enrollment planning recommendations will be under discussion for most of the Fall Semester. The CCHE is forwarding its report to the Legislative Committee on September 1, 1994. The enrollment planning process is culminating in a report outlining recommendations for the governing boards to implement which, theoretically, should save dollars by running the operations of the institutions more effectively and efficiently; also included in the report are four "solutions" from which the Legislature may choose.

Solution one fully funds enrollment growth and inflation. Enrollment growth is projected to be 2.8 percent and inflation is estimated to increase by 3.7 percent. Solution one proposes that tuition rates increase 3.7 percent and that general fund support increase 6.5 percent (enrollment

growth plus inflation.)

Solution two proposes that tuition rates increase to a level of 50 percent of cost, and the financial aid request would increase to guarantee a need-based financial aid program for all eligible students.

Solution three is a voucher system for all resident students.

Solution four, labeled as the default solution, is the assignment of students by a centralized agency.

It is the intention of the CCHE to recommend solution one to the Joint Budget Committee.

The five policy areas will not be selected until January 1, 1995.

The CCHE agenda item discussing the 1995-96 Budget Request is included in your notebook. Also included is the final draft of the Enrollment Planning Committee document which is being presented to the CCHE on Thursday, September 1, 1994.

The CSM Budget Request will encompass the above information from the CCHE; the internal factors that we are proposing be used are:

New undergraduate student enrollment for the fall of 1995 is projected to be 600. Our projected student FTE for 1995-96 is 3,112.

Graduate enrollment will remain constant.

Resident and nonresident tuition will increase by the rate of inflation, 3.7 percent.

The Budget Request document, including narrative, will be written and prepared for your approval at the October 14, 1994 Board of Trustees meeting. I look forward to our discussion at the Board meeting.

<u>Action Motion Requested:</u>

Information only.

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ldeits

TOPIC: **1995-96 CCHE BUDGET REQUEST AND RECOMMENDATION**

PREPARED BY: **SHARON HART**

I. SUMMARY

This agenda item presents for discussion a $5.3 million general fund increase for state-funded student financial aid, funding for mandated costs for the governing boards, and a total general fund and tuition increase for the governing boards. Because the five policy areas for funding higher education in 1995-96 have not been set and the Enrollment Planning recommendations are not completed, some options are presented that may require adjustments resulting from final Enrollment Planning recommendations and the setting of the five policy areas.

II. STATUTORY AUTHORITY

23-1-105 (2) The commission shall make annual systemwide funding recommendations, after consultation with the governing boards of institutions, for the state-supported institutions of higher education to the general assembly and the governor.

III. MASTER PLAN BASIS

Goal One: To assist Coloradans in becoming citizens of our nation and the world by providing access to educational opportunities of the highest quality.

Goal Two: To provide equal access for those who historically been underserved by higher education, including native Americans, Hispanic Americans, African-Americans, and Asian Americans.

IV. BACKGROUND

In order to meet the deadlines established by the Governor's office and the Joint Budget Committee, the Commission should take action on the budget recommendations by the October meeting. The five policy areas for governing board funding increases are to be established before January 1, but the budgetary process requires action by the Commission by November 1, 1994. The Commission is responsible for recommending increases for general fund and tuition.

Last year, the higher education governing boards received funding through the five policy areas in addition to funding for mandated costs such as salary increases and insurance premium increases. The funding for mandated costs was a major part of the budget increase for 1994-95 and included $2.9 million in general fund and $29.5 million in tuition funds. The five policy areas increased funding by a total of $10.3 million for enrollment, productivity, workforce training, and K-12 Linkages. Financial aid received a $4.3 million increase.

V. STAFF ANALYSIS

The Commission is responsible for making recommendations for 1995-96 funding for the governing boards, and requesting funds for the CCHE budget including state-funded student financial aid.

State-Funded Student Financial Aid

Since the five policy areas included financial aid for 1994-95, but may not for 1995-96, staff recommends that the Commission request financial aid as part of the CCHE budget and adjust the request if it is included as a policy area.

The staff proposal is for a total increase of $5.3 million, including $4.3 million for need-based grants and $1 million for other programs. Because need-based recipients are increasing faster than enrollment, the proposed increase for this program is calculated based on historical increase in recipients. The proposal also includes an inflation increase for recipients and a 10 percent increase in participation. The $1 million provides funding increases for work-study and merit-based scholarships at an amount needed to cover projected enrollment increases, an estimate for federal matching requirements and the Native American Tuition Assistance Program.

CCHE

Staff propose that the CCHE administrative budget be increased by the salary increases and inflation factors used by the Office of State Planning and Budgeting. These factors are used for all departments of state government and are applied to operating costs as well as, staff salaries and benefits. This proposal assumes no increase in the number of the CCHE staff.

Increases for the WICHE Optometry program and WICHE dues will be added when those increases are known.

The Programs of Excellence appropriation is $2,899,831 for 1994-95. Staff propose to maintain the program base and request 3.7 percent increase to cover inflation bringing the total to $3 million in 1995-96.

Mandated Costs

Last year, the governing boards were funded for 80 percent of mandated costs, including a legislatively mandated 10 month deferral of 1993-94 salary increases, salary increases for 1994-95, health insurance increases for classified employees, and workers' compensation and risk management insurance premium increases. These costs were funded with a 5 percent increase in resident tuition, a 10 percent increase in non-resident tuition and $2.9 million in general fund.

Preliminary estimates of mandated costs have been compiled for discussion purposes. CCHE staff are currently working with the governing boards to compile final mandated cost data.

In addition to items included in last year's mandated costs, staff propose including increased operating and utilities for new state-funded buildings. Funding would be based on the amount of new square footage multiplied by a statewide average cost per square foot for maintenance. In addition, the CFOs are still discussing other possible costs that should be funded as mandates, including indirect cost recovery charges.

Using preliminary data and assuming a 3.0 percent salary increase, estimated workers' compensation and risk management, and estimated increases for operating costs for new buildings, mandated costs are estimated at $27 million for 1995-96. The amount of general fund needed for mandated costs is determined by deducting revenue from tuition increases from the total estimated mandated costs. Therefore, the tuition rate increase is a major component of the funding for mandated costs. Using the $27 million estimate, tuition revenue from a 3.7 percent (inflation) rate increase would cover $16 million, leaving a balance of $11.0 million needed from general fund to cover all mandated costs. Increasing the non-resident rate to 5.7 percent (inflation plus 2.0 percent) would reduce the general fund need to $7.0 million.

Governing Boards

Because the five policy areas are not set for 1995-96 and mandated cost figures are estimates at this time, staff propose a recommendation consistent with the "First Solution" outlined in the Enrollment Planning funding options. This solution fully funds enrollment growth and inflation. The proposal generates a $27.6 million increase in general fund for enrollment growth (2.8 percent) and inflation (3.7 percent) and a base tuition increase of $16.1 million assuming a rate increase equal to inflation (3.7 percent) for resident and non-residents and an additional increase in tuition revenue for enrollment growth (2.8 percent) of $12.8 million.

This recommendation should be adjusted according to the mandated costs that are funded as well as any cost saving achieved by efficiencies agreed to by the governing boards as part of the Enrollment Planning recommendations.

STATE OF COLORADO

Department of Higher Education
COLORADO COMMISSION ON HIGHER EDUCATION

Robert L. Hawkins, Chairman
Brian H. Hall, Vice-Chair
Alexander E. Bracken
Marshall A. Crawford
Steven W. Farber
David E. Greenberg
Christine Johnson
Deedee Gale Mayer
J. Timothy Waters

Roy Romer
Governor

Dwayne C. Nuzum
Executive Director

MEMORANDUM

TO: Enrollment Planning Working Group

FROM: Robert G. Moore

DATE: August 30, 1994

SUBJECT: **Final Draft**

Attached is the final draft of the enrollment planning materials that we will use as the action item at the September 1 Commission meeting. Would you please provide copies to others in your organization who need to receive advanced copies of the materials. We will have copies of the materials available at the Commission meeting.

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Executive Director

MEMORANDUM

TO: The Higher Education Planning Committee

FROM: Commission on Higher Education

DATE: September 1, 1994

SUBJECT: **Enrollment Planning**

FINAL DRAFT

The Commission on Higher Education views the challenges identified in HB 94-1355 as an opportunity to work with the leadership of public higher education in Colorado to determine how the system will continue to serve a significantly increasing number of resident students by providing them an opportunity to participate in a quality educational experience. As a part of the process the Commission has (1) studied enrollment trends and projected future enrollment growth, (2) reviewed patterns of financial support from the state general fund, resident student tuition and non-resident student tuition, (3) examined the implications of funding limitations imposed upon state government, (4) reviewed available information concerning citizen attitudes about higher education and their personal educational objectives, and (5) accessed the best available information concerning trends and best practices in public higher education in the nation. As a result of the discussion during the enrollment planning process, the Commission has reached the following conclusions:

- There will be a significant increase in the number of resident students entering the higher education system. The system must continue to serve those students and must continue to increase the ethnic diversity of higher education graduates.

- Colorado citizens continue to desire access to the higher education institutions for which they are academically qualified.

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- The quality and the program diversity of the public higher education institutions in Colorado serve the citizens well and must be maintained. Approaches which encourage cooperation among the institutions and sectors of the system will be best for the students and the citizens.

- Higher education institutions will continue to make appropriate changes that will improve the effectiveness and efficiency of the delivery of higher education. The combination of these changes will quantifiably reduce the increases in state higher education costs.

- There are actions which should be taken by the General Assembly that will permit higher education to serve the increases in student demand and reduce higher education costs.

- The best solution initiatives are those that rely upon incentives and normal market mechanisms to create change rather than using regulations and constraints to cause change.

The Challenge

The state, students, and the business sector all benefit when quality higher education services are provided. These groups, along with the public institutions of higher education, need to participate in determining how a quality educational opportunity will continue to be available for every qualified student in this state during a time of increasing enrollment and significant fiscal constraints. The following pages describe findings and recommendations that result from enrollment planning efforts of the Commission and the leaders of Colorado public higher education. They are offered to the Higher Education Planning Committee in accordance with HB 94-1355. Most of the efforts focus on undergraduate programs, since the increases in enrollment demand will first occur there. Within the next year, the Commission will propose solutions for assuring that quality graduate programs will be maintained and prepared to serve additional resident students.

Many of the identified system efficiencies will be achieved by the Commission, the governing boards, and the institutions. The Commission will adopt policies no later than January 1995 which define the process for achieving system efficiencies. Prioritized solutions for continuing to provide access are identified by the Commission. The first two solutions are considered top priorities because they continue to provide qualified students access to the institutions of their choice.

Enrollment Demand

In the last six years, the percentage of recent high school graduates who entered the state higher education system increased from 33.7% to 39.3% (Chart 1). This increase in participation caused the statewide higher education FTE enrollment to increase even though the number of students who graduated from high school actually declined from 32,621 to 31,839 (Chart 2). High school enrollments have increased and the number of high school graduates from Colorado is projected to increase through 2005. Assuming the participation rate of these recent high school graduates remains constant, **the FTE enrollment of resident students will increase 22%**

from 106,000 in 1994 to 129,000 in the year 2001 (Charts 3 and 4). Enrollment patterns of recent high school graduates indicate that a majority of FTE students will enroll at traditional, residential four-year higher education institutions. CCHE, therefore, projects that the largest enrollment increases will occur in the university/college sector followed by the research university sector. Since the 1993-94 average state cost per student in the university/college sector is $3,224 as compared with the systemwide average state cost of $3,772; having the largest enrollment growth occur in the university/college sector will reduce the average percentage increase in state funding per higher education student.

Recommendations

The following recommendations are proposed to increase the efficiency and productivity of the system. The Commission has directed CCHE staff to work with the staffs of the public higher education governing boards to quantify the potential cost savings of these recommendations. The Commission looks forward to the opportunity to present the results of that effort to the Higher Education Planning Committee. Although the Commission believes that these changes are necessary to help accommodate a part of the anticipated enrollment growth, additional resources will be necessary to accommodate the majority of expected resident enrollment increases.

1. It has been seven years since the first-time freshman admission standard index was implemented. Over that time period the Commission and institutions have been able to determine the correlation between the index score and the potential for a student to succeed academically at an institution. Based upon this information, the Commission and the governing boards pledge to **determine the appropriate admission standards** for each institution. This action will cause institutions within the same admission tier to have different index scores and should help to further direct students to the institutions where they have the greatest potential to succeed.

2. The current system offers a variety of educational opportunities at institutions diverse in programs, and role and missions. Governing boards and institutions should be charged with the responsibility to review program offerings and **determine if programs should be eliminated.** Criteria that could be used to make this decision include low enrollment demand, low employment potential for graduates, or low institutional priorities. Boards and institutions should also be encouraged to establish **differential tuition rates** for expensive programs provided to only a limited number of students.

3. **Changes in deployment of the faculty** are the responsibility of those in charge of the institutions, including faculty members. Such changes can reduce the cost of a college education. Governing boards and institutions are responsible for changing the way they deploy their faculty in order to ensure effectiveness of academic programs. Incentives that focus faculty on their teaching role are especially needed at research universities.

4. The establishment of a **credit hour limit on state undergraduate financial support at four-year institutions** would create an incentive for institutions to improve student advising, and for students to make wise decisions in their use of taxpayer subsidized

credit hours. An appropriate credit hour limit would be the number of credit hours required for graduation in the student's selected discipline plus 15 credit hours.

5. Efficiencies can be achieved in the two-year sector by **eliminating state financial support for courses that are not primarily academic or vocational in nature.** Students who enroll in two-year institutions for courses that are primarily avocational in nature would be responsible for paying for the cost of the course.

6. There is appropriate public concern about the ability of full-time students to complete their undergraduate degree requirements in a timely manner: two years for an associate and four years for a bachelor's degree. In response to this concern, some programs and colleges have establish guaranteed time-to-degree programs. Similar programs should be established which **guarantee that all full-time students who make satisfactory academic progress can graduate in a set time period.** Another way of stating the guarantee would be to **guarantee that student progress to degree will not be impeded by lack of course availability.** Such a program is also valuable in that it requires institutions to clarify what is expected for a student to earn a degree in a timely manner.

7. The K-12 system provides a quality academic experience to qualified students who take Advanced Placement (AP) courses. In order to obtain college credit for successfully completing an AP course, a student must pass a test, at a cost of $65 per test. In order to establish an incentive for students to take AP courses in high school (and reduce cost for the student and the state) a program which **pays for the testing costs associated with earning college credit for an AP high school course** should be established.

   The K-12 system is improving the educational programs for all of its students. As soon as the system is ready to certify that all high school graduates are academically prepared for a postsecondary educational experience the **state should eliminate funding for remedial courses for recent Colorado high school graduates.** Higher education and K-12 administrators must continue their efforts to articulate how high school students will demonstrate sufficient academic preparation to graduate from high school.

8. There are some academic programs, especially professional programs, which may benefit from converting to an **enterprise program - - free from state regulation and state financial support.** Institutions would be able to offer the programs where convenient for the student. Non-state sources would have to pay at least 90% of the cost, since state financial support for enterprise programs is limited to no more than 10% of the total program cost.

9. Some students enter the public sector of higher education after completing coursework at non-public institutions operating in Colorado. The state and the student would benefit from the establishment of a **guaranteed transfer program** for students who are enrolled at accredited institutions that meet the necessary academic and administrative criteria for such a program. Public institutions are encouraged to begin their efforts with institutions that are accredited by the North Central Association of Colleges and Schools.

10. Recent **changes in technology** have made it possible to improve education and reduce costs by performing educational functions on a campus that were previously performed by a faculty member. Self-paced learning mathematics and foreign languages laboratories are examples of recent technology improvements. The state and the institutions should make the necessary investments in technology in order to achieve significant long-term cost savings and educational quality improvements.

11. Serving an increased number of students requires adequate academic facilities. The number of students served could be significantly increased at a reduced capital cost by **increasing the availability of classes during non-traditional hours and time periods.** While these changes, which include a "year-round calendar" for higher education, will reduce the projected capital needs of the system, the need will still remain for the state to invest in higher education capital construction projects. Academic facilities comprise less than half of the available square footage on some campuses, (research facilities, student housing, dining and recreational facilities, and athletic facilities are examples of other facilities) yet they represent the major portion of the state's financial investment in campus buildings.

12. Additional students could be served by the establishment of a **state-funded financial aid program for resident students attending certain public higher education institutions in other states.** Out-of-state institutions would be selected based upon cost per student. Student participation in the program would be limited by the availability of Colorado-funded financial aid.

The Challenge Remains

The Commission, governing boards, and institutions are committed to making needed changes to increase productivity and efficiency. Additional work will be required before the marginal cost savings that result can be projected. These changes by themselves, however, are not sufficient to adequately finance anticipated enrollment growth. Provision of a quality education to an increased number of resident students is beyond the capabilities of the system of higher education without an increase in funding or a reduction in student choice.

Funds which support the academic programs for resident students come from three major revenue sources: state general fund, resident student tuition, and non-resident student tuition. The average general fund per student in the system, adjusted for inflation, has declined 9.5% from 1989-90 to 1993-94. Tuition rates for both resident and non-resident students have been increased to compensate for the decline in general fund support.

The directive to accommodate the anticipated enrollment is clear in HB 94-1355. There are some who argue that the general fund per student must be restored to its previous level in order to adequately accommodate the enrollment. While it is unrealistic to believe that such a level of funding is possible, the Commission may expect that the funding for students in higher education should increase at the rate of enrollment growth plus inflation. This would establish a funding policy for higher education similar to the K-12 funding limit under Amendment 1, which is based upon enrollment growth and inflationary increases.

Funding Options for Increased Enrollment

First Solution

The first solution proposed by the Commission for assuring that the increase in enrollment can be accommodated within the system is that **student tuition increase at the rate of inflation**, and the **general fund** support of the system **increase at the rate of inflation and enrollment growth minus identified cost savings which are achieved by system efficiencies.** This solution allows the system to have a constant, inflation adjusted, funding level for each student served and would allow institutional efforts to focus on providing access for qualified students instead of working to maximize funding increases. It also reduces the potential impact on the general fund. A cost savings goal for the system efficiencies will be identified. The general fund increase required will be reduced by the amount established as the goal. Additional cost savings would remain with the institution.

Second Solution

The Commission and public higher education leaders recognize the significant limits on the general fund and the demand from other programs for increased general fund support. If the General Assembly determines that the general fund is not able to provide the type of funding increases required by the first solution, then the Commission proposes that the share of the educational costs paid by resident undergraduate students gradually increases from the current level of 25%-30% of cost, to a level where **students pay 50% of the actual cost of their higher education**. It is anticipated that the system could accommodate all enrollment growth if the student share of costs increased to 50%. This solution would also require a **guaranteed need-based financial aid program for eligible students.** While this solution has the potential of increasing the total tuition paid by a resident undergraduate student, it does preserve qualified students' opportunities to attend the institution of their choice. Chart 5 shows current resident tuition charges and what those rates would be if they were calculated at 50% of cost.

Third Solution

Should the first two solutions be rejected, the Commission suggests the state institute a **limited state subsidy per student** system for funding higher education. Students would be allowed to enroll in an accredited higher education institution operating in the state and receive a state subsidy that is not greater than tuition or an established maximum amount. It is assumed that the resulting competition for students would reduce the total costs of educating all students, and that the current financial aid programs would continue. This system could result in significant tuition increases at public research institutions, and significant decreases at public two-year institutions. While the Commission is concerned that the limited state subsidy system may deny access to high cost institutions, it remains a preferable option to denying students access to the system at all.

Default Solution

The Commission believes that if none of the three proposed solutions is selected, the state will be forced into a position where student choice of institutions is reduced and **students are assigned to institutions** based upon the student's program selection and the cost of the institution. While it might be possible to direct some enrollment through the use of index scores, the necessary cost savings could not be achieved unless students were assigned to institutions. Assignment of students would permit institutions to function at the most efficient enrollment level; growth in enrollment would be directed to only the lowest educational cost institutions.

The Process

The Commission officially began the enrollment planning effort at the June 2 Commission meeting. After considering a presentation from the CCHE staff and discussing the issues with the staff representatives of the public higher education governing boards, the Commission decided that the best approach for enrollment planning, within the limited available time, would be to develop models of every reasonable possible solution to the issues identified in HB 94-1355 and then, after considering the models, identify those which seemed to offer the best possible solutions.

The CCHE staff and staff representatives of the public higher education governing boards formed an enrollment planning working group to review and discuss the enrollment planning efforts of the CCHE staff. CCHE contracted with Dennis Jones of the National Center for Higher Education Management Systems (NCHEMS) to serve as an expert advisor to the CCHE staff for the enrollment planning process.

At the July 7 Commission meeting, the Commissioners met with the chief executive officers of public higher education and discussed the major policy questions that had been identified by the enrollment planning working group. The Commission also reviewed and agreed upon the enrollment projections that had been developed by the CCHE staff. A summary of the conclusions of that discussion is attached as Appendix A.

The enrollment planning working group then began identifying and describing possible solution models. The initial work product of that group was the identification of seventeen possible models. Those models were discussed by Commissioners and chief executive officers of public higher education at the August 4 Commission meeting. Following those discussions, the enrollment planning working group revised the models into their final form and these models are included as Appendix B.

At a special Commission meeting on August 24, the Commission discussed a recommendation from the Executive Director of CCHE that the Commission, the governing boards and institutions engage in a collaborative effort to increase the efficiency and productivity in the system. The Executive Director also recommended four possible solutions for accommodating the projected increases in enrollment in a time of financial constraints. The Commission took

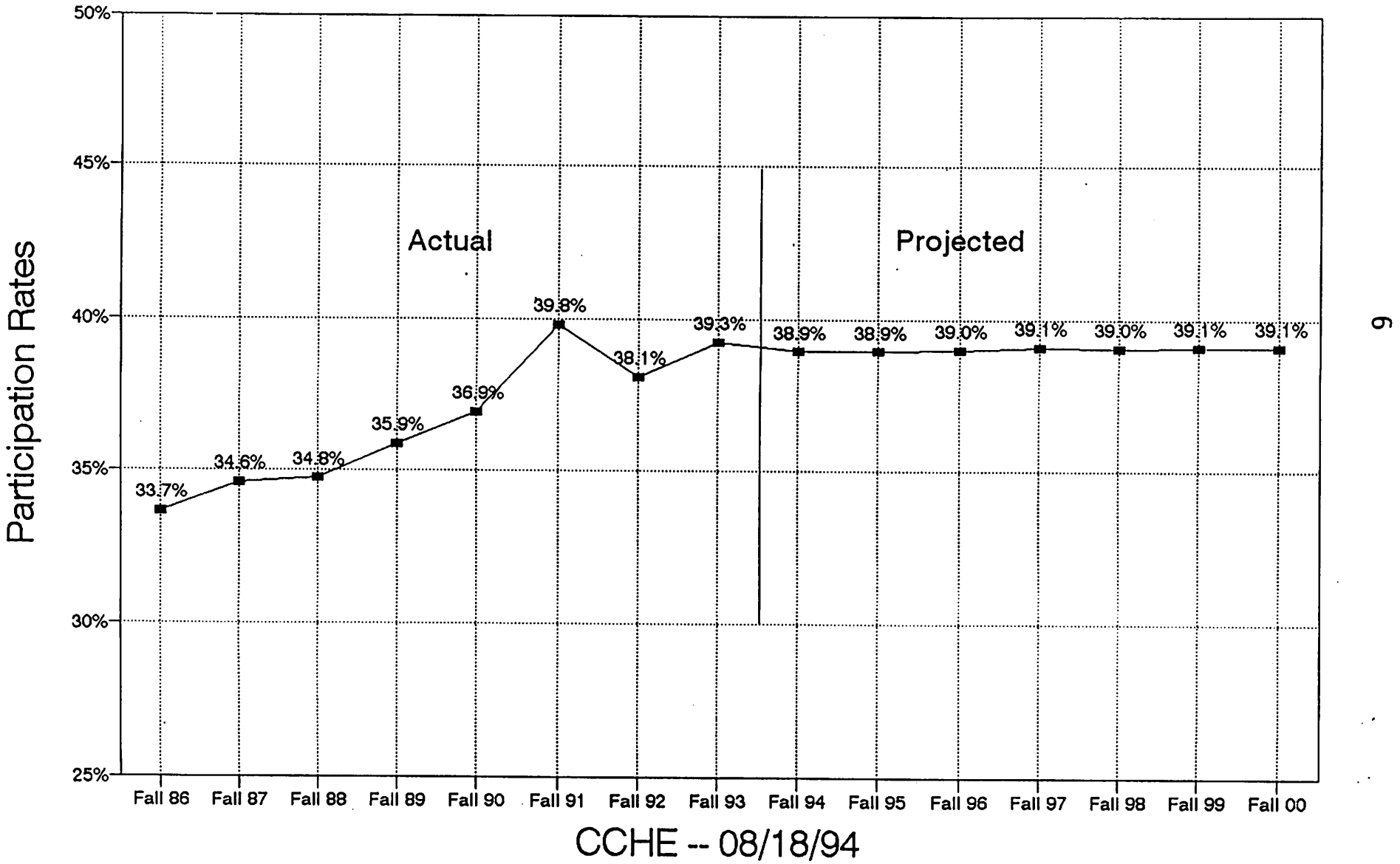
action on these recommendations at that Commission meeting, and the results of that action have been identified in this memorandum.

The CCHE staff has been directed to produce a formal document which better describes the process, the issues that were discussed, the facts that were considered and the conclusions that were reached. That document is scheduled for publication by the end of September and the first available copies of that document will be provided to the Higher Education Planning Committee.

The Commissioners believe that the preliminary enrollment planning product that has been developed by the Commission, the CCHE staff, the public higher education chief executive officers and their staffs, should be of great benefit to the Higher Education Planning Committee as it begins efforts in Colorado public higher education enrollment planning. The Commission looks forward to participating in the Committee's deliberations and is available to assist the Committee as needed. The Commission has concluded that significant improvements in the system can occur and those improvements will be responsive to the limited financial resources of the state. Then, with the cooperation of public higher education faculty, administrators and staff, public decision makers, the Colorado business community, students and their parents; it will be possible to continue to provide a quality public higher education for all qualified Colorado residents who seek education. The Commission looks forward to working with the Higher Education Planning Committee to help this goal become a reality.

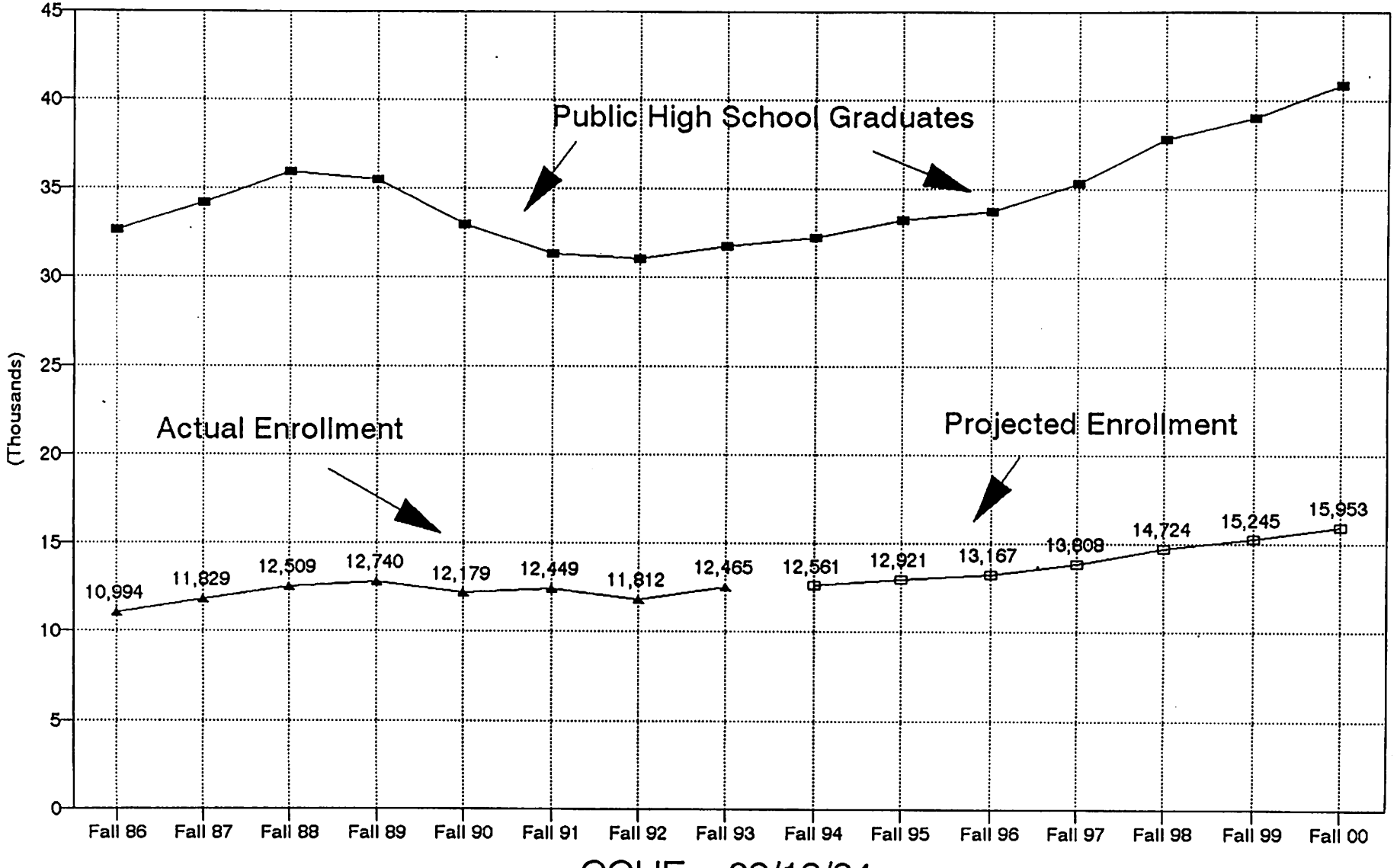
CHART 1

Participation Rates for 1st Time HS Grads to Colorado State System



Colorado State System Projections

1st-Time High School Grads to College



CCHE -- 08/18/94

CHART 3

FTE In-State Student Enrollment

Actual FY 87 and 94, Projected FY 01

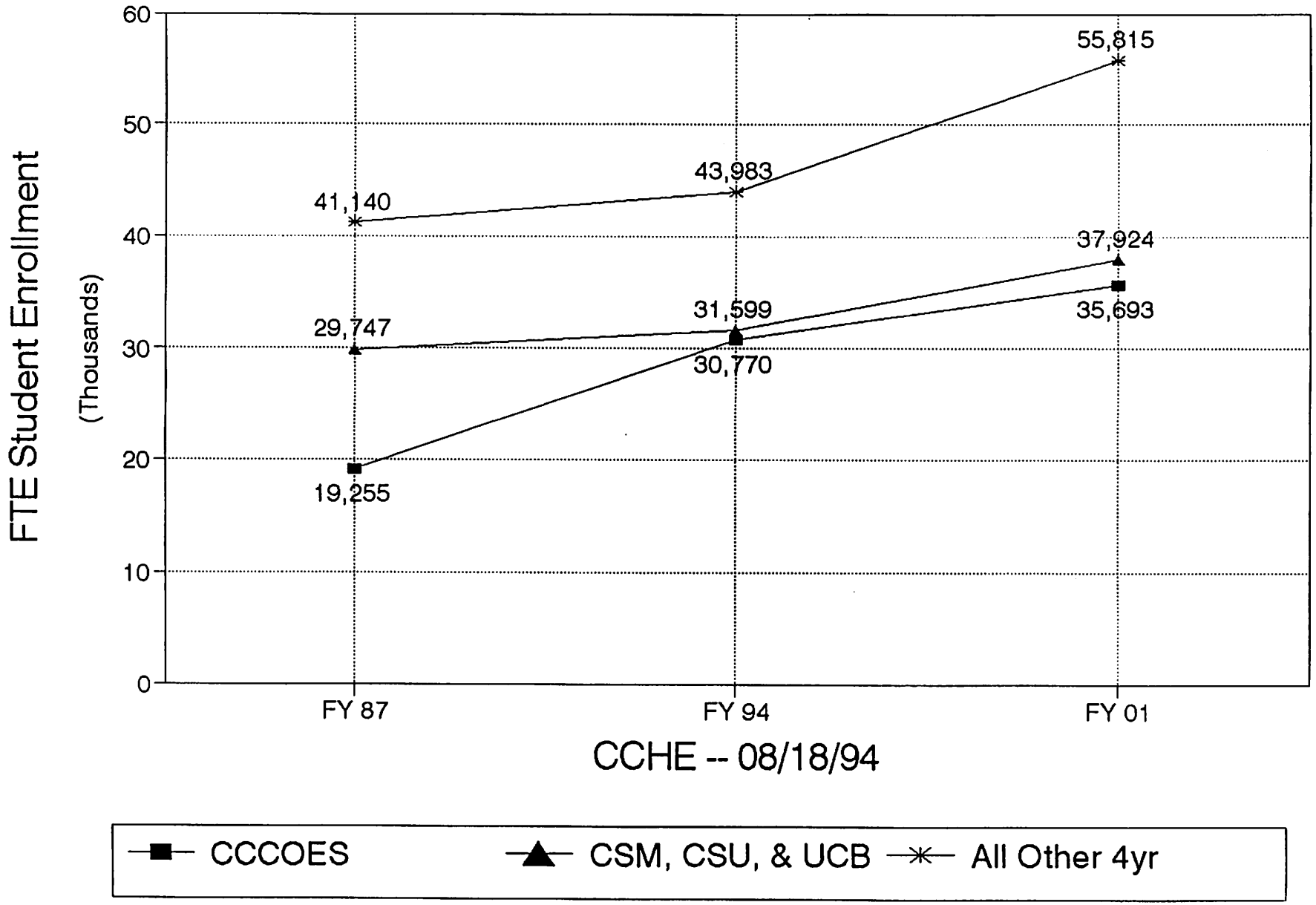
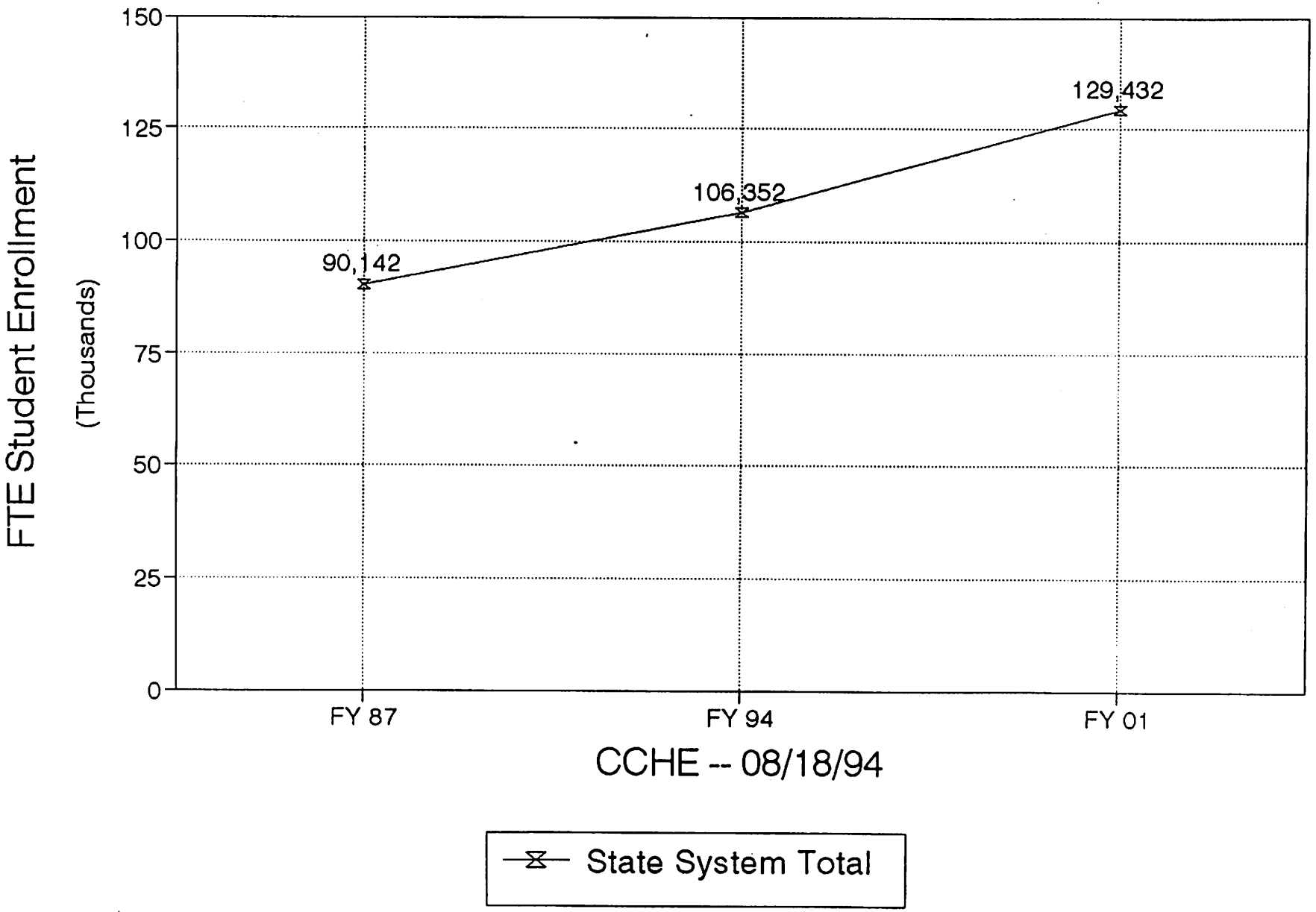


CHART 4

FTE In-State Student Enrollment

Actual FY 87 and 94, Projected FY 01



APPENDIX A

DISCUSSION SUMMARY
ENROLLMENT PLANNING EFFORT
CCHE Meeting-July 7, 1994

1. **Issue of Accommodating Enrollment** - It was agreed that the goal should be to have a statewide public system of higher education, rather than a campus-based system, which is able to accommodate all resident student enrollment demand. Recognizing that there is little that can be done to further reduce the educational cost per student, it may not be possible to accommodate this demand unless funding (tuition and general fund) per student increases at the rate of inflation. There is a desire to use admission standards, rather than enrollment caps, to direct enrollment among the campuses. Admission standards rely upon the academic skills of the student to determine which students, and how many students, should be served at a given institution. The use of tuition rates to direct students to certain campuses is not a preferred option. The CCHE staff will provide information on the physical plant capacity of the institutions and the system.

2. **Issue of Reliance on Technology** - There was agreement that technology changes should be used to enhance the quality of the educational experience. Since cost savings are retained by the governing boards, there is currently an incentive in the system to invest in technology changes that will help to lower the cost per student to educate. Campuses have had success using technology as an enhancement to educational programs and to provide distance learning, but the amount that they have been able to invest in technology has been small and thus the cost savings have not been substantial. The improved use of technology can enhance the current campus-based educational system and has the potential for significant long-term cost savings. CATI will be asked to provide information on educational technologies and the possibilities of public/private partnerships that are relevant to the discussion. The private sector may be better prepared to use technology to provide low demand educational services to lower populated areas of the state.

3. **Issue of How Changes in the K-12 System Will Impact the Higher Education System** - While improvements in K-12 may eliminate the need to provide remedial education services to recent high school graduates, there will still be a need for remedial services for individuals who did not complete high school or who have been away from the educational process for an extended time period. The question for discussion is who will pay for the costs of educating these individuals. Improvements in K-12 may lead to an expanded role for high school students earning college credit while still in high school, but this will not significantly reduce the demand on the higher education system. The demand for higher education services may increase at a faster rate than projected as a result of improvements in the K-12 system.

4. **Issue of Funding Economic Development Efforts of Higher Education** - While there was a suggestion that economic development efforts could be funded through a process of joint review proposals from higher education, some cautioned that too much emphasis on direct funding of economic development could detract financial support away from graduate education. There was general consensus that this issue would be better stated as an issue of the state supporting graduate education. A better understanding of the role that the state has played in funding and supporting of graduate education is needed, as well as an analysis of graduate enrollment trends.

5. **Issue of State Directing Students Away From High Cost Programs to Lower Cost Programs** - There was little support for the concept of a centralized state policy limiting student program choice. There was support for a concept which required governing boards of higher education to determine, within the resources they have, the program mix that they can support and which is consistent with the role and mission of the institutions that they govern. In determining which programs to offer, the governing boards need to be aware of the demand from Colorado employers for graduates of that program and the potential economic contribution to the State from graduates of the program. The private sector may be able to meet some of the demand for high cost/relatively low enrollment programs.

6. **Issue of Significant Increases in State Financial Support** - There was general consensus that it would be very difficult, in the near future, for the state to increase financial support for higher education above the rates of inflation and population growth. There was also a belief that a strong case needs to be made to the state to increase financial support at a rate that is at least equal with the increases in the rates of inflation and enrollment growth.

7. **Issue of Major Changes in the Role and Mission of Institutions** - It was agreed that it was not a goal of the enrollment planning process to change the statutory role and mission of institutions and that there were no efforts at this time to recommend such changes. It, however, was noted that in a process such as the enrollment planning effort, where all issues need to be subject to change, there could be no guarantee that the issue of a change in statutory role and mission of an institution would not be discussed at some future time in the process.

8. **Issue of Changing the Policy Regulations Regarding Off-Campus Instruction** - While there was an interest and need in learning more about the history and trends of enrollment in non-state-supported courses and programs, there was general consensus that it would be worthwhile for higher education to pursue a goal of bringing a solution to this issue. The intent would be to pursue a system of extended studies programs which would utilize enterprise designations and other financial support models in order to be responsive to student enrollment needs. There was no discussion or agreement as to what would be included in the potential solution.

9. **Issue of Coordinating the Enrollment Planning Effort with Other Significant Projects** - The lack of discussion of this issue was viewed as a summary statement that coordination of work efforts is important and is the responsibility of the CCHE staff to accomplish. Some of the policy areas for funding increases in the next fiscal year may emerge from the enrollment planning process.

10. **Issue of Potential Changes in Tuition Policies** - There was no agreement as to the changes that should be considered. There were suggestions to explore changes in the following areas: the policy of CCHE to limit tuition charges for undergraduates to a percent of cost, the policy of state subsidy for non-degree-seeking students, the interaction between financial aid and tuition rates, differential tuition charges based upon programs, establishment of a state policy for tuition charged to graduate students and part-time students, and the relationship between legislative appropriation of tuition revenues and CCHE tuition policies. The positive aspects of having tuition revenues outside of the Amendment 1 limitations was discussed.

11. **Issue of the Role of the Non-Public, Private and Proprietary Sectors in Meeting Increased Enrollment Demand** - There is a role for these sectors to play in meeting increases in demand. There was a statement that DU and Regis are interested in increasing their enrollments of resident students provided there are increases in state financial support. Concern was expressed about the potential tuition costs if the proprietary sector was the sole provider of certain high-demand educational programs. The point was made that the federal government is the major provider of aid (through the guaranteed loan program) for students in the proprietary sector and, therefore, there is already a form of public support for students in that sector.

12. **Issue of Focusing the Study on the High Growth Areas of the State** - It was agreed that the issue of enrollment demand is a statewide issue and all areas of the state must be a part of developing potential solutions.

Other Acknowledgements - It was agreed to acknowledge that the questions did not raise the issues of quality or expanding services to the historically underserved because it was correctly assumed that the Commission will not propose solutions that would reduce the quality of the educational experience or reduce the commitment to increase graduation rates of minority students.

The discussion also included a note of caution that, if the state develops a system of funding higher education that is based primarily upon student FTE, then institutions will be required to increase their enrollments in order to be able to compete for funds. It was suggested that the state pursue a method of financing which would recognize the need of all institutions, regardless of enrollment increases, to deal with the issues caused by inflation in the cost of providing services.

7/18/94

APPENDIX B

A.1. STATE AND STUDENTS PAY THEIR FAIR SHARE

Description: The General Assembly would commit to providing an annual increase in the general fund appropriation to the governing boards of higher education by a percentage amount equal to the percentage increase in resident student FTE and the percentage increase in inflation, as used in the Amendment 1 calculations. The General Assembly would also commit to increasing the appropriation from tuition and fee revenues by a percentage amount equal to the percentage increase in FTE students (both resident and non-resident) plus the percentage increase in inflation.

Rationale: The model would provide a stable funding commitment to higher education. The higher education system would commit to serve all eligible resident students if this level of funding increase is provided.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Significant

Assumptions in the Analysis:

1. All increases in resident higher education students could be accommodated within the current system of higher education with this level of financial support.

Financial Implications: The total general fund increase for 1995-96 would be $26.7 million including $11.1 million for enrollment growth and $15.6 million for inflation. Tuition revenue would be expected to grow $12.8 million from increases in the number of students and $16.1 million from tuition rate increases for a total increase of $28.9 million.

Access Implications: Access to the current system of higher education would be provided for all resident students.

Statements in Support of the Model:

1. Would allow institutional efforts to focus on providing access for qualified students instead of working to maximize funding increases.
2. Maximizes student choice within the current constrained state fiscal environment.

Statements in Opposition of the Model:

1. Would reduce the flexibility of the General Assembly to annually determine what percentage of the general fund appropriation should go to higher education.
2. Does not redirect any funding policies within the system of higher education, nor does it redirect public institutions of higher education.

CCHE Staff August 30, 1994

A.2. VOUCHERS

Description: Every resident undergraduate student enrolled in a Colorado higher education institution would receive an equal amount of state financial support. This support would continue until the student earns the maximum of 150 credit hours.

Rationale: It is the responsibility of the state to assist resident undergraduate students (not higher education institutions) in obtaining a postsecondary education. Each resident postsecondary student is entitled to an equal amount of state financial support for their education.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Significant

Assumptions in the Analysis:

1. Graduate education funding would continue in the current manner. If this model is implemented, a model for graduate education, which recognizes state financial support at the undergraduate level, would be developed.
2. Public institutions would increase resident tuition rates so that the combination of the voucher and tuition revenue is equal to the current amount of general fund and tuition revenue.
3. Resident students at all postsecondary institutions in Colorado would be eligible.
4. All current state-funded student financial aid programs would continue.

Financial Implications: Assuming that the current general fund support for undergraduate programs is $275.4 million, and that the total amount would be equally distributed among the 98,000 FTE students in the public sector and the 22,000 FTE students from proprietary and independent colleges sector, the voucher would be approximately $2400 per year. Approximate tuition rates in the public system would be: Community Colleges - $1100, Universities and Colleges - $2000, and Research Universities - $4400.

Access Implications: It would expand state financially-supported access into the non-public, private and proprietary sectors, and therefore increase resident student access to some of these programs. It would significantly increase costs to resident students to attend public institutions, and therefore may reduce access to public institutions.

Statements in Support of the Model:

1. All resident students enrolled in postsecondary education in pursuit of a certificate or undergraduate degree would receive an equal amount of state financial support.
2. The public system of higher education would (in effect) change to a private system.

Statements in Opposition of the Model:

1. Student wealth could become a greater factor in determining which residents could afford an education at the most expensive higher education institutions.
2. Would establish an entitlement program that could require supplemental appropriations.
3. Could negatively impact small rural public higher education institutions.

CCHE Staff August 30, 1994

A.3. STATE INCENTIVES FOR STUDENT COMPLETIONS

Description: The state would establish an incentive program to reward public higher education institutions for each resident student who earns an undergraduate degree or certificate or transfers with academic credits to another public institution.

Rationale: Because it is in the interest of the state to have students achieve their educational goals, institutions of higher education should receive some state financial support based upon students who achieve their educational goals.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Very Limited

Assumptions in the Analysis:

1. This incentive model applies only to undergraduate students.
2. The incentive, while financially significant, would not affect the current base funding of public institutions of higher education.
3. The incentive amount would be different for an associate degree, a bachelor's degree, a certificate and a transfer of credit.

Financial Implications: Additional funding would be provided to encourage increased degree completion. Currently, over 13,000 bachelor's degree and over 5,000 two-year degrees and certificates are awarded annually to resident students. Increasing production by 5% would result in 900 additional awards.

Access Implications: This model could improve access by creating an incentive to move students through the system as fast as possible.

Statements in Support of the Model:

1. Would create an incentive for receiving institutions to accept transfer students.
2. Would focus institutions on efforts to assist students in completing their degrees.
3. Income data show that real gains in earning power occurs only when an individual completes a degree. A collection of successful course completions does not provide the individual the same economic benefit.

Statements in Opposition of the Model:

1. Students currently seek a variety of higher education services, including degrees, certificates, and specific courses. It is not fair to have an incentive system that does not recognize efforts of higher education institutions which provide these non-degree educational services.
2. Could create an incentive to reduce the quality of the educational experience and devalue the degree.
3. Could discourage institutions from serving high-risk students.

CCHE Staff August 30, 1994

B.1. EFFICIENCIES AND CONSOLIDATIONS OF PUBLIC PROGRAM OFFERINGS

Description: Public institutions would be legislatively authorized to eliminate program offerings that are determined to be low in institutional priorities, low in potential employment opportunities, or low in student demand.

Rationale: Current efforts of institutions to terminate programs have identified changes in statutory authority that would be beneficial to the process.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Limited

Assumptions in the Analysis:

1. The decision to eliminate or add programs would be the responsibility of the governing board and the institution, except for CCHE review of new doctoral programs.
2. Governing boards would have state legal authority to discontinue programs and eliminate unnecessary staff and faculty in order to achieve the cost savings from program eliminations.
3. The current role and mission of the institutions would be maintained.
4. Any financial savings resulting from elimination of programs would remain with the governing board and the institution.

Financial Implications: Currently, programs are discontinued every year (37 in 1992-93) but maximum savings are not realized because faculty and staff levels are difficult to reduce under current law.

Access Implications: Resident students could have reduced access to certain programs.

Statements in Support of the Model:

1. Makes access to high demand, high employment potential programs the first priority of higher education.
2. Gives the governing boards and institutions additional legal authority to make some decisions that under the current system could be subject to litigation and high legal costs.

Statements in Opposition of the Model:

1. Reduces resident student access to certain programs.
2. Recent court decisions indicate that it will be difficult to provide sufficient protection to governing boards and institutions that make permanent staffing reductions.

CCHE Staff August 30, 1994

B.2. STATE DIRECTS STUDENTS TO PROGRAMS

Description: Students seeking admission to a traditional residential campus would be directed to institutions with lower program operating costs or additional physical plant capacity by changes in admission standards, differential tuition rates or direct assignment of students by a centralized state agency.

Rationale: Educational costs can be reduced by either assigning students to, or using differential tuition rates to encourage students to select lower cost institutions.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Limited

Assumptions in the Analysis:

1. Assumes there is sufficient physical capacity in the system to serve additional students.
2. Assumes that resident students will enroll in the institutions to which they are directed.
3. The educational cost per student would be reduced to the point where all additional demand would be accommodated within the available appropriation.

Financial Implications: If the anticipated additional students in 1995-96 are allowed to enroll at the campus of their choice, it would cost the general fund approximately $11.1 million. If none of the enrollment growth was permitted at the research universities, it would reduce the cost by $1 million. If all enrollment growth was permitted only at the community colleges, it would cost a total of $8.1 million, a savings to the general fund of $2.9 million.

Access Implications: Students would have access to their desired program somewhere within the system. The institution to which the student was directed may not be as convenient for the student or have the same residential setting as the student's preferred institution.

Statements in Support of the Model:

1. Preserves student access to the public system of higher education.
2. Allocating scarce state resources through this model is preferable to preserving access through the use of an arbitrary enrollment cap.

Statements in Opposition of the Model:

1. Reduces students' choice, especially for educationally disadvantaged students, of a Colorado institution and may encourage students to attend out-of-state institutions.
2. Would increase centralized administrative costs to assign students to institutions.
3. Would increase the power of the state centralized administration over student choices.
4. Reliance upon differential tuition rates could increase student share of total costs.

CCHE Staff August 30, 1994

B.3.A. EDUCATE RESIDENTS AT OUT-OF-STATE PUBLIC INSTITUTIONS

Description: Colorado resident students would receive a Colorado financially subsidized higher education at a public institution in another state.

Rationale: Because other states have either excess capacity in their public institutions, or downward enrollment trends, the state of Colorado could purchase higher education for its residents at non-Colorado institutions for less than the cost of educating those students in Colorado.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Moderate

Assumptions in the Analysis:

1. The Colorado student would pay tuition that is equal to or less than the tuition charges at a comparable Colorado institution and the state would pay the remainder of the tuition charge.
2. Transportation to and from the institution would be the student's responsibility.
3. There would be no pay-back provision placed upon these students.
4. Assumes some resident students would be willing to go to another state and receive an education of comparable quality.
5. Admission standards would be establish by the institution.

Financial Implications: Several western states have the capacity to take Colorado students. For example, Nebraska, North Dakota, and Wyoming indicate that they would take students at less than 100% of cost. Oregon and Montana would take students at their standard non-resident rate. The potential exists for sending approximately 15% of the expected growth in the four-year sector (2700 FTE students) to Nebraska, North Dakota and Wyoming through this option.

Access Implications: This model will assure Colorado resident students access to a public higher education. Students may decide that since the education will be provided outside the state, they have reduced access to education.

Statements in Support of the Model:

1. Colorado should take advantage of the fact that other states are willing to subsidize part of the cost of educating non-resident students in their state.
2. This model eliminates the capital costs for students who enroll out of the state.
3. Views the system of public higher education as a regional or national system.

Statements in Opposition of the Model:

1. Access is reduced if students have to go out-of-state for an education.
2. Educating students out-of-state allows other states to receive the economic development benefits of providing public higher education.
3. Students may decide not to return to Colorado after completing higher education.

CCHE Staff August 30, 1994

B.3.B. STATE CONTRACT FOR SERVICES WITH COLORADO NON-PUBLIC INSTITUTIONS AND LOCAL DISTRICT COLLEGES

Description: State will contract with non-public Colorado higher education institutions and/or Colorado local district colleges for higher education services for an established number of students at an established rate.

Rationale: It may be possible to contract with the University of Denver and Regis University and/or with some of the local district colleges to provide higher education for resident students at a rate that is less than the cost of increasing the capacity of the public institutions.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Limited

Assumptions in the Analysis:

1. The Colorado student would pay tuition that is equal to or less than charges at a comparable public institution and the state would pay the remainder of the tuition charge.
2. There would be no pay-back provision placed upon these students.
3. Admission standards would be establish by the institution.
4. The number of resident students currently served by these institutions would not be included in the contractual agreement.

Financial Implications: Savings could be realized because non-public and local district colleges provide instruction at a per FTE cost that is lower than the state system. Local district colleges receive about 25% less state funding per student than community colleges. Non-public institutions receive only state-funded financial aid. The average state-funded need-based grant to students at non-public institutions is $1,300.

Access Implications: This model will assure additional Colorado resident students access to a higher education within the state of Colorado.

Statements in Support of the Model:

1. Colorado should take advantage of the fact there are two non-public institutions who have expressed some interest in helping serve the additional enrollment demand and that local district colleges, especially those with dormitory facilities, may be interested in increasing their enrollments of out-of-district Colorado students.
2. This model eliminates the capital costs for students who enroll at these institutions.
3. Takes advantage of the fact that these institutions have additional enrollment capacity.

Statements in Opposition of the Model:

1. There are currently Colorado resident students attending these institutions without benefit of a state contractual agreement to financially support the students. Will the state be required to financially support all resident students enrolled at the institution?
2. It will be very difficult to fairly determined which residents are allowed to access this subsidized education.

CCHE Staff August 30, 1994

B.4.A. DETERMINE APPROPRIATE ADMISSION STANDARDS

Description: This approach would use data from the last seven years, to assure that all students with index scores high enough to indicate a high probability to succeed at an institution would have the opportunity to be admitted to the institution.

Rationale: After seven years of experience, institutions are able to document which students, based upon an index score, have a high probability to succeed. This information should be used to properly direct students.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Very Limited

Assumptions in the Analysis:

1. Institutions within the same admissions tier would not all have to have the same index.
2. Qualified students will still be able to transfer among the public institutions.

Financial Implications: Improved placement of students should result in increased retention and degree completion. Enrollment in upper division courses should increase.

Access Implications: This model assures access to the institution of the students choice, provided the index score for the students indicates the ability to succeed at the institution.

Statements in Support of the Model:

1. Distributes students throughout the system based upon the academic skills of the individual student and maintains the quality of the educational experience.
2. Reserves access to the higher cost institutions for the most academically qualified students and increases potential completion rates of students who enroll.

Statements in Opposition of the Model:

1. Continues to rely solely upon the current index standards to indicate the academic ability of students.
2. Certain categories of students may be disadvantaged by continued reliance upon the index.

CCHE Staff August 30, 1994

B.4.B. INCREASE ADMISSION STANDARDS TO DIRECT ENROLLMENTS

Description: This approach would use the admission index for first-time freshmen to direct enrollment so that the current enrollment levels at the four-year institutions remain constant.

Rationale: If the state is unable to afford to increase the size of higher cost institutions in order to serve the additional enrollment demand, the fairest method for determining which resident students are admitted to a campus is to rely upon the admission index.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Limited

Assumptions in the Analysis:

1. Institutions within the same admissions tier would not all have to have the same index.
2. The size of the admissions window could also be adjusted in order to direct students.
3. Qualified students will still be able to transfer among the public institutions.

Financial Implications: This approach results in cost savings by enrolling students in lower cost sectors. Directing enrollment growth away from the research universities would result in state savings of about $1 million in 1995-96. Directing enrollment growth entirely to the Community College sector could save $2.8 million in 1995-96.

Access Implications: Preserves student access to a system of higher education while limiting student access to certain institutions within the system.

Statements in Support of the Model:

1. Distributes students throughout the system based upon the academic skills of the individual student and maintains the quality of the educational experience.
2. Reserves access to the highest cost institutions for the most academically qualified students and increases potential completion rates of students who enroll.

Statements in Opposition of the Model:

1. Continues to rely upon the current index standards to indicate the academic ability of students.
2. Certain categories of students may be disadvantaged by continued reliance upon the index.
3. Creates the possibility that resident students with identical index scores as an older sibling will not be eligible to attend the same institution that admitted their sibling.

C.1. IMPROVE USE OF TECHNOLOGY

Description: Recent changes in technology have made it possible to improve the educational process and, at the same time, reduce the cost of education by using enhanced technology to perform an educational function that was previously performed by a faculty member. Examples of where higher education is currently using technology in this manner are foreign language labs and self-paced mathematical modules.

Rationale: Future changes in technology will increase the potential for improving the educational process, while reducing reliance upon faculty and staff to perform certain functions. The long term cost savings resulting from these changes can be used to expand student access to the system of higher education.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Moderate

Assumptions in the Analysis:

1. Changes in the educational process which occur in the next three to five years will be based upon technology that is known today.
2. Once the initial investment costs of technological improvements are paid, the resulting cost savings can be applied to expanding access to the system.
3. The greatest benefit is at institutions that offer more than two sections for a single course.
4. The cost savings will not be that significant in the near future because of the initial investment costs and because the initial savings will come from the elimination of part-time faculty and instructors.

Financial Implications: After initial equipment investment, technology reduces operating costs primarily through reduced personnel costs. For a limited number of courses where distance learning of interactive computer labs can provide appropriate instruction, staff may be reduced by 50% compared to traditional delivery systems.

Access Implications: This model will permit an expansion of services to additional students.

Statements in Support of the Model:

1. This model expands the use of technology to improve the educational program while reducing costs.
2. Institutions have plans in place for improving the use of technology on the campuses and can proceed as soon as a revenue source is identified.

Statements in Opposition of the Model:

1. This model may reduce the time and opportunities for interaction between students and faculty members.
2. This model envisions a gradual increase in the use of technology improvements on a campus. Greater cost savings could be achieved with a faster timeline for change.

CCHE Staff August 30, 1994

C.2. STATE INCENTIVES FOR INCREASED RELIANCE UPON THE K-12 SYSTEM

Description: Reduce expenditures at higher education institutions by requiring that all recent high school graduates come fully prepared for postsecondary education and by creating an incentive for students to take advanced placement (AP) classes in high school and receive college credit for successful completion of AP coursed.

Rationale: Improvements in the K-12 system can most affect higher education in the next five years in two direct ways: (1) elimination of the need to offer remedial classes in order for recent high school graduates to enter the postsecondary system, and (2) the expanded use of advanced placement courses.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Moderate

Assumptions in the Analysis:

1. In the next two to four years, all Colorado high school graduates will be academically prepared for postsecondary education.
2. That the state higher education system would continue to be funded for and would provide remedial education services for individuals who are not recent Colorado high school graduates.
3. The state will pay the testing costs for advanced placement tests.

Financial Implications: Advanced placement tests were taken by 6,157 Colorado students. To pay the fee ($65 per student) for these students would cost $400,000. Approximately 33% of all remedial students are 21 years old or younger. Assuming that these students are recent Colorado high school graduates and would either be academically prepared for postsecondary education or have the cost of their remedial education paid by the K-12 system, would reduce costs in the higher education system by approximately $3.7 million.

Access Implications: Expands access to the higher education system by building upon the improvements occurring in the K-12 system.

Statements in Support of the Model:

1. Taxpayers should not have to pay for remedial education services in the postsecondary system for recent high school graduates.
2. It makes sense to expand the opportunities for Colorado residents to earn college credit when they successfully complete an AP program at their high school.

Statements in Opposition of the Model:

1. This model does not make a big enough change in the system. It should expand the role that K-12 plays in providing college credit for advanced high school course work.
2. This model relies upon changes that are planned for the K-12 system, but have not yet occurred. What happens in four years if these changes do not occur?

CCHE Staff August 30, 1994

C.3. INCREASE UTILIZATION OF EXISTING FACILITIES

Description: Campuses would increase the availability of classes during non-traditional hours (early mornings, late afternoons, Friday afternoon, and weekends) and time periods (summer sessions and between semesters) in order to increase utilization of the facilities.

Rationale: This change could reduce the need for major new capital construction projects to serve increased numbers of students. It could also reduce total calendar time-to-degree and increase the availability of required courses.

Potential for Solving Demands of Enrollment Increases in the Next Five Years: Moderate

Assumptions in the Analysis:

1. Students would be willing to attend classes during what are now non-traditional time periods.
2. Current resident/non-resident student ratios would remain the same.
3. Additional faculty members required to teach the classes would have office space similar to that of current faculty.
4. Auraria, which currently uses this model, may need additional capital facilities.

Financial Implications:

It is estimated that the additional academic space need to serve the projected enrollment increase would cost $681 million. The implementation of a trimester academic calendar and the offering of classes during non-traditional hours could reduce the capital costs by approximately 50 %. The operating costs of the trimester calendar and expanded class time offerings have not been calculated.

Access Implications: Access to classes scheduled during the current time periods would remain constant and access to classes scheduled during the non-traditional time periods would increase.

Statements in Support of the Model:

1. If Auraria can increase the usage of the facilities, then the same change can occur on other campuses.
2. The current college calendar is too inefficient to be preserved.

Statements in Opposition of the Model:

1. Students need time periods in the evenings, weekends and between semesters to work and earn the money necessary to continue their education.
2. There are insufficient support programs and support facilities to deal with this increased usage of academic facilities.

CCHE Staff August 30, 1994

C.4.A. STATE INCENTIVES FOR IMPROVEMENTS IN DEPLOYMENT OF THE FACULTY

Description: This model assigns each governing board and institution the responsibility of changing the way in which they deploy their faculty in order to ensure the effectiveness of academic offerings and to prepare for the demands of enrollment increases. Institutions will report progress toward meeting their redeployment goals.

Rationale: Faculty salary costs are the largest component of the higher education budget. Changes in the deployment of faculty are the responsibility of those in charge of the institutions, including faculty members, and can reduce the cost of an education and improve the quality of the educational experience.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Limited

Assumptions in the Analysis:

1. The change that needs to occur in restructuring higher education is ultimately the responsibility of the faculty and their institutions, not state government.
2. The role of the state is to create an environment in which change and improvement can occur, rather than to dictate specifically how it should occur.
3. There continues to be a need for institutions of higher education, especially research institutions, to create incentives for faculty to teach.

Financial Implications: This strategy is focused on increasing productivity. Generally, financial resources within institutions would be focused to provide instruction and student services for additional students at the lowest possible cost without reducing quality.

Access Implications: Access to quality programs will improve.

Statements in Support of the Model:

1. There is a clear need for research universities to improvement the deployment of their faculty toward the teaching mission of the institution.
2. This model places the responsibility to change where it belongs - on the faculty and their institutions.

Statements in Opposition of the Model:

1. There will be no statewide coordination of changes that occur in Colorado.
2. How will the state be assured that the changes which occur will be sufficient to meet the enrollment demand?

CCHE Staff August 30, 1994

C.4.B. CHANGES IN DEPLOYMENT OF THE FACULTY

Description: This model assigns each governing board and institution the responsibility of changing the way in which they deploy their faculty in order to reduce costs.

Rationale: Faculty salary costs are the largest component of the higher education budget. Changes in the deployment of faculty are the responsibility of those in charge of the institutions, including faculty members, and can reduce the cost of an education.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Significant

Assumptions in the Analysis:

1. The change that needs to occur in restructuring higher education is ultimately the responsibility of the faculty and their institutions, not state government.
2. The role of the state is to create an environment in which change and improvement can occur, rather than to dictate specifically how it should occur.
3. There continues to be a need for the varieties of educational experiences offered in Colorado's public system of higher education.

Financial Implications: This model would impact costs by reducing the number of future faculty that would be hired to teach increased enrollment. The current state-wide student/faculty (including full and part-time faculty) ratio is about 18 to 1. Given the anticipated enrollment increases, over 160 faculty would need to be hired each year to maintain the 18 to 1 ratio, at a cost of over $8 million.

Access Implications: Access to institutions will continue, though class sizes may increase.

Statements in Support of the Model:

1. If the state needs to reduce expenditures in higher education, then increases in class size, reductions in variety of courses offerings, and reductions in the use of full-time faculty are all appropriate cost reduction techniques.
2. This model places the responsibility to change where it belongs - on the faculty and their institutions.

Statements in Opposition of the Model:

1. There will be no statewide coordination of changes that occur in Colorado.
2. How will the state be assured that the changes which occur will be sufficient to meet the enrollment demand?
3. The changes in deployment of the faculty may reduce the quality of the educational experience.

CCHE Staff August 30, 1994

D.1.A. PLACE A 150 CREDIT HOUR LIMIT ON STATE UNDERGRADUATE FINANCIAL SUPPORT AT FOUR-YEAR INSTITUTIONS

Description: The state would continue to provide a subsidy for the educational costs of all resident students enrolled in undergraduate programs at four-year institutions until the student has earned 150 credit hours towards a degree. Resident students would be charged the full cost of their courses once they reach the 150 credit hour limit.

Rationale: In deciding how to ration financial resources, a lower priority should be assigned to resident students who have had a significant opportunity to earn an undergraduate degree.

Potential for Solving Demands of Enrollment Increases: Moderate

Assumptions in the Analysis:

1. This limitation on state financial support would begin on July 1, 1996.
2. 150 credit hours is a sufficient number of credit hours to earn an undergraduate degree.
3. Resident graduate students would continue to receive the current state financial support.

If this model is selected for implementation, work would begin immediately to establish a similar process for graduate students.

Financial Implications: Current data show 3,449 students at four-year institutions have earned more than 150 credits at the undergraduate level. As a group, these students have accumulated more than 65,000 credit hours above the 150 credit level at an estimated general fund cost of $8 million.

Access Implications: Could reduce access for everyone who has earned 150 credit hours at Colorado public institutions.

Statements in Support of the Model:

1. It creates an incentive to revise the curriculum and improve student advising, so that students will complete their education with less than 150 credit hours.
2. It could provide an incentive for students to complete their degree with 150 credit hours or less.
3. It provides some limit on the state subsidy for educational programs without denying anyone access to the programs.

Statements in Opposition of the Model:

1. It will provide a penalty for students who select majors, such as education, that require more than the average number of hours to complete.
2. It will require increased administrative expenditures to monitor each resident student in the system and enforce the limits of state financial support.

CCHE Staff August 30, 1994

D.1.B. PLACE A LIMIT ON STATE FINANCIAL SUPPORT FOR STUDENTS IN TWO-YEAR INSTITUTIONS

Description: The state would continue to provide a subsidy for the educational costs of all resident students enrolled in basic skills, certificate, vocational, job training, associate degree and academic undergraduate programs at two-year institutions. State financial support for students enrolled in other courses or programs at two-year institutions would be eliminated. State financial support students with a bachelor's degree who are not enrolled in a job training program or course would also be eliminated.

Rationale: In deciding how to ration financial resources, a lower priority should be assigned to resident students who are taking courses for personal improvement rather than for a job or an academic credential.

Potential for Solving Demands of Enrollment Increases: Moderate

Assumptions in the Analysis:
1. This limitation on state financial support would begin on July 1, 1996.
2. The Community College system will design and implement the model.

Financial Implications: ?

Access Implications: Could reduce access for anyone who has earned a bachelor's degree and has enrolled in a two-year institution for other than a job training opportunity.

Statements in Support of the Model:
1. It could provide an incentive for students to with a bachelor's degree to focus their course work on job training.
2. It provides some limit on the state subsidy for educational programs without denying anyone access to the programs.

Statements in Opposition of the Model:
1. It will provide a penalty for students earn a bachelor's degree and then decide to earn another bachelor's degree in a different academic field.
2. It will require increased administrative expenditures to monitor each resident student in the system and enforce the limits of state financial support.

CCHE Staff August 30, 1994

D.2. AUTHORIZE PRIVATIZATION OF SOME PUBLIC PROGRAMS

Description: Governing boards and institutions would be authorized to examine all programs to determine which could be offered as an enterprise program. The state would provide no more than 10% of the total educational costs for those programs.

Rationale: Extended studies programs operated by public institutions and programs offered by non-public institutions demonstrate that these kinds of programs can become self-supporting.

Potential for Solving Demands of Enrollment Increases in the Next Five Years: Limited

Assumptions in the Analysis:

1. These programs would operate as enterprises under Amendment 1 criteria.
2. There would be no state regulatory control over these programs.
3. The incentives for institutions to privatize programs would include elimination of any centralized program control and complete authority to receive and expend all funds earned.

Financial Implications: Cost savings would result through reducing the general fund support to a limited number of programs that could achieve "enterprise" status under Amendment 1. Savings could then be used to for enrollment growth.

Access Implications: Depending upon the programs selected and the tuition rates established for the programs, access could be reduced.

Statements in Support of the Model:

1. Since students in the extended studies pay full cost for certain programs, it is reasonable to expect students in some public programs to pay the full educational cost of the program.
2. Many students in certain programs are eligible for either a significant salary increase upon attainment of the degree or are receiving employer tuition assistance. They should be willing to pay more for their education.
3. Since students at non-public institutions pay the cost of their education, it may be possible for public institutions to charge students more for specific programs.

Statements in Opposition of the Model:

1. There is a public benefit to having programs offered in the state at a reasonable tuition level and it is only fair that the public pay a portion of the cost of supporting these programs.
2. It is not fair to totally eliminate the state subsidy for some students.

CCHE Staff August 30, 1994

D.3. TUITION AND FINANCIAL AID INCREASE SO THAT STUDENTS PAY 50% OF THE COST OF THEIR EDUCATION

Description: All resident students would be charged 50% of the academic costs of their education. Students eligible for need-based financial aid would be guaranteed that aid.

Rationale: It is not practical for the state to continue to pay for more than half of the higher education costs of resident students who have sufficient personal and family wealth to pay for a significant part of their education.

Potential for Solving Demands of Enrollment Increases in Next Five Years: Significant

Assumptions in the Analysis:

1. The state would make the appropriations necessary to fully support all students who are determined to have financial need.
2. The costs per student for educational programs would remain constant. The resident tuition revenues would increase and the general fund expenditures for institutional support would decrease by similar amounts. An increase in general fund appropriation would then be made for the state-funded student financial aid program.

Financial Implications: The state would have to increase general fund support for need-based grants by $73 million. Additional revenue generated by tuition would be approximately $150 million for a net savings to the general fund of $77 million.

Access Implications: It would increase access for students currently not eligible for state-funded financial aid and would now become eligible under this model. It could decrease access for students who are not need eligible but perceive the increases in tuition rates to be prohibitive.

Statements in Support of the Model:

1. The taxpayer should not pay for more than half of the cost of a higher education for students who have sufficient personal or family wealth to pay the cost of the education.
2. If the state and resident students are paying equally for the cost of the education, they are sharing equally in the responsibility of assuring that a quality education is provided and that appropriate use is made of the opportunity that is provided.

Statements in Opposition of the Model:

1. Since resident undergraduate students are currently paying between 25% and 30% of the cost of their education, this model could increase tuition charges up to 100%.

CCHE Staff August 30, 1994

E.1. INSTITUTE ADMISSION DELAYS

Description: As student demand exceeds the capacity of the system to provide a quality education with the available resources, potential students would be granted a delayed admission to the institution. The delay would be for a specified time period, such as a semester or a year.

Rationale: It is better public policy to delay admission to an institution than to provide immediate admission to an institution that must reduce the quality of the program in order to admit all students.

Potential for Solving Demands of Enrollment Increase in Next Five Years: Unknown

Assumptions in the Analysis:

1. Students would be willing to wait a semester or a year before entering higher education in order to preserve the quality of the educational experience.

Financial Implications: This option delays admissions and the subsequent cost of serving new students until such time as sufficient resources are available. No savings are realized through this model.

Access Implications: This model meets the letter of the law by admitting all students. It assumes that access will be accomplished by student willingness to wait for a specified time period.

Statements in Support of the Model:

1. Matches the enrollment level with the funding that is available.
2. Provides resident student access to a quality public higher education when the student actually enrolls.

Statements in Opposition of the Model:

1. An enrollment delay will in fact become a denial of enrollment to some students.
2. It is unrealistic to expect students to be willing to wait for entrance into a Colorado public institution when so many other postsecondary options exist.
3. The implementation of a delayed admission program will unfairly impact the individuals most at risk of not seeking postsecondary education.

CCHE Staff August 30, 1994

E.2. ACCEPT CREDIT TRANSFERS FROM OTHER SECTORS

Description: Create a system which identifies course credits that will automatically be accepted when a student transfers from a non-public, private or proprietary institution to a public institution.

Rationale: This will reduce the potential that a public institution expends funds educating a student in a course that is very similar to a course that has already been successfully completed by the student.

Potential for Solving Demands of Enrollment Increase in Next Five Years: Very Limited

Assumptions in the Analysis:
1. Non-public, private and proprietary institutions are willing to invest the faculty time and administrative cost necessary to create such a program.
2. There are sufficient courses, which are comparable to courses in the public sector, successfully completed by students in the non-public, private and proprietary sectors who wish to transfer into the public sector, to justify the costs of this model.

Financial Implications: Transfer agreements would have to be negotiated before the financial implications of the model could be calculated.

Access Implications: Would improve access to the public system for students who have completed courses in the non-public, private and proprietary systems.

Statements in Support of the Model:
1. Would reduce the potential of students having to retake a course in a different sector of higher education in order to receive credit for successfully completing the course.
2. Since a transfer system is in place for academic credits between all public institutions, it is reasonable to expand the transfer system to include courses taken in non-public, private and proprietary institutions.

Statements in Opposition of the Model:
1. Establishes additional unnecessary bureaucracy since public institutions already accept most credit transfers from the non-public institutions.
2. Since few of the proprietary sector courses are academic courses, an academic transfer system cannot be justified.
3. While it is difficult to establish a transfer system for vocational credits, there are existing agreements for credit transfers in nursing programs, art programs, and technology programs and this indicates that a mandated system is not necessary.

CCHE Staff August 30, 1994

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II-i
Presented by Lane

Subject: CSM Cultural Diversity Plan

Background Information:

As you may recall, the enclosed CSM Cultural Diversity Plan was forwarded to you some time ago for your review. Debby Lane will be at the meeting and will answer any questions that the Board may have about the report.

Action Motion Requested:

COLORADO SCHOOL OF MINES

Cultural Diversity Plan

The Colorado School of Mines (CSM) is committed to maintaining educational and working environments that are receptive to the diversity of views, cultures, and experiences which are critical to the academic mission of higher education. Such diversity enriches the intellectual lives of all, and it increases the capacity of a university to serve the educational needs of its community. The CSM Cultural Diversity Plan focuses on three primary areas: students, faculty, and environment. In each of these areas the plan looks at the school's goal or objective, what activities are occurring to reach or maintain that goal, and what actions are anticipated for future or continuing efforts.

Students

GOAL: To have a culturally diverse student population where all students feel welcome and comfortable while being offered an extraordinary educational experience.

Because of aggressive recruitment efforts, The Colorado School of Mines has made notable progress in the recruitment of minority and female students.

- In 1980, minorities represented only 2.9% (83 students) of CSM's total student body. There were 477 (16.4%) women and 255 (8.6%) international students.

- For the 93-94 academic year, minorities represented 10% of CSM's 2969 student population with specific ethnicity breakdowns as follows: 42 Blacks (1.4%); 125 Hispanics (4.2%); 29 Native Americans (.9%); and, 100 Asian/Pacific Islanders (3.3%). There were 668 (22.5%) female students during the 93-94 academic year.

- International students make up 14.1% of the 93-94 student population, representing 65 countries.

- Forty-six states are represented by the CSM student population.

- Women represent 27.9% of the applicants, 28.3% of the accepted students, and 24.4% of the committed students for fall 1994.

- For fall 1994, minority students were 15.5% of the applicants, 14.5% of the accepted students, and 18.2% of the committed students. Colorado minority students were 19.3% of the Colorado applicants, 18.2% of the accepted Colorado students, and 22.0% of the committed Colorado students.

According to the Minority Engineering Program (MEP) Director, Mr. Julian Martinez, the National Action Council on Minorities in Engineering (NACME) reports that 70% of the engineering schools in the U.S. have declining enrollment. The traditional source of engineering students has been the Anglo male population. Demographically, the number of Anglo males entering college in science and engineering will decline until 1995. The obvious source for new engineering students is from the female and minority populations.

Through our MEP, we are working to not only increase minority representation at the undergraduate level but to instill in those who are qualified a desire to go on to graduate school in engineering. This will help increase the supply of doctorates who might consider university teaching as a career choice. There are several organizations and programs that are supported by CSM to recruit minority students: Colorado Educational Services and Development Association (CESDA), National Hispanic Institute (NHI), Expanding Your Horizons (EYH), and Mathematics, Engineering, Science Achievement (MESA). Throughout the CSM community there are numerous individuals and groups participating in activities and programs designed to attract and retain qualified minority and female students and to encourage and support them throughout their educational careers. Highlights of these programs are as follows:

Minority Engineering Program (MEP)

The Minority Engineering Program (MEP) was established at the Colorado School of Mines in 1989, and serves students in a variety of ways. The main thrust of the program is the recruitment and retention of qualified minority students to study at CSM.

The minority students are represented on campus by the following student professional organizations:

- The National Society of Black Engineers (NSBE)
- The Asian Student Association (ASA)
- The Society of Hispanic Professional Engineers and Scientists (SHPE)
- The American Indian Science and Engineering Society (AISES)

The MEP actively assists the Admissions Office (recruitment), involved in seeking scholarship funds and coordinates efforts with the Financial Aid Office (retention), works with Student Activities (retention) and serves as liaison for the Placement Office with companies seeking minority students for employment, both summer and permanent.

Summer Minority Engineering Training Program (SUMMET)

SUMMET is an intensive pre-college summer program which gives qualified minority students the opportunity to live on campus and experience engineering, science and mathematics, as well as the Colorado School of Mines, for four weeks. The goal of the program is to encourage minority students to attend college and to consider engineering and the sciences as career options. Minority students, who are currently sophomores or juniors, with a grade point average of 3.0 or above, and who have taken advanced math and science courses are eligible to apply. The program is free to all participants due to donations from corporate sponsors and to the Colorado Commission of Higher Education's Program of Excellence Award (earned in 1986 and the same award as part of the Precollegiate Minority Education Program in 1991) which provides $60,000 each year until 1995. This past year's class started with 59 students and 57 graduated. SUMMET is going into its 24th year (started in 1970) and was expanded from 15-25 students to 50-60 students in 1988. This year's class achieved well academically. Traditionally, 25% of these students enroll at CSM. The SUMMET program has been widely recognized for its contributions to minority engineering.

Summer Bridge

A pre-college preparatory program for students who have been accepted to CSM. During the summer before entering their freshman year, minority students who have been offered CSM admission get an early start on their math and science classes, and prepare for the technical course work at CSM. BRIDGE also helps ease the transition into a college social environment by having students in a residence hall during the length of the program. This program is sponsored primarily by the AMOCO Corporation.

Student Support Service Program

Student Support Services is a TRIO grant student development and retention program that promotes the academic and personal success of all participants through a variety of student-centered services. Services offered include tutoring, academic advising, financial aid counseling, seminars and workshops, cultural enrichment activities, and computing and study facilities. In order to be eligible for participation, students must either be first generation college students (neither parent may have attained a bachelor's degree), or have a verifiable physical or learning disability, or be below a certain family income level and be receiving financial aid.

CSM 101

CSM 101 is a freshman success seminar required for all entering freshmen. One component of the course is a section on cultural diversity which has a desired learning outcome to increase the students' sensitivity to other students with different cultural backgrounds. Students are expected to participate in cultural diversity exercises, problem solve diversity scenarios, and enter into discussions on cultural diversity issues.

Expanding Your Horizons

Expanding Your Horizons is an annual program on the CSM campus for junior high school female students. This program is designed to introduce young women to the many careers available in the areas of mathematics and science.

Society of Women Engineers (SWE)

The goals of this organization are professional growth and outreach. Professional growth is pursued through both formal and informal contacts with practicing engineers (tours, speakers, and social occasions). Outreach is the effort to attract and retain the interest of women in entering careers in engineering through activities in schools, Girl Scouts, etc. Social activities for members help reinforce the commitment to CSM and provide forums for discussion of the challenges faced by women in a male-dominated career field. The CSM chapter of SWE currently has approximately 125 members. Student representatives attend both regional and national conventions and a scholarship for a SWE member has been established. Activities are primarily funded through corporate contributions.

Young Scholars

For the past seven years, Dr. Ardel Boes and Dr. Barbara Bath of the CSM Mathematics Department, have conducted a program for Native American middle school students and their teachers. Research shows that if minority students take algebra and geometry in high school, their success rate in post secondary education is vastly improved. This program targets middle school students so that we can influence their choices and improve that success rate. Each year thirty students from across the United States participate in the program. This year we had three students from North Carolina, two each from Kansas, Minnesota, and Colorado, thirteen from Arizona, five from New Mexico, and one each from Alaska, Oklahoma, and Montana. These students represented twelve different tribes. Colorado School of Mines students act as resident assistants in the dorms. A unique facet of the program is the participation of fifty-six volunteers from the AT&T Bell Labs who help the students complete projects in computers/robotics, energy and the environment, or space and rockets. This Young Scholars program has received national acclaim. Drs. Boes and Bath have again been invited to participate in the SUMMA (Strengthening Underrepresented Minority Mathematics Achievement) conference in November, 1994, in Washington, D.C.

International Student and Scholar Services (ISSSO)

The International Student and Scholar Services Office (ISSSO) provides on-going counseling and referrals to deal with academic and social adjustment issues which may arise during the school year for international students and scholars. This allows the students and scholars to take advantage of the variety of resources available to them at CSM and in the larger community. Through a network of international student volunteers on campus the student or scholar may receive help with housing, shopping, banking, and other immediate concerns. The ISSSO staff help international students realize their educational objectives, assure that the international students are aware of the codes of the institution, assist with a variety of crises, assist international students with adjusting to a new culture, inform students and scholars of the U.S. immigration law and regulations, and monitor the international students' academic and social adjustment for their sponsors. The office also works with the coordinator of the International Friendship Program and the International Speakers Bureau. The International Friendship Program was developed to provide international students the opportunity of becoming acquainted with American family life and also to give the families the opportunity to become familiar with other cultures.

American Voices

For the past two years, Dr. Barbara Olds, McBride Honors Program, and Dr. Barbara Bath, Mathematics, have taught the course entitled, American Voices, for the McBride Honors Program. This course focuses on the multicultural influences on our society.

The aforementioned programs will continue as constant efforts to not only attract and retain minority and female students at CSM but to also create and reinforce an environment where all students feel comfortable and where multiculturalism is the norm. CSM is always looking for new programs and ways to expand our efforts. A few of the additional future programs currently being planned or considered are:

- In April, 1995, there will be a Sonia Kovalesky Math Day on the CSM campus for female high school students and their teachers. This program will be funded by a grant from the Association of Women in Mathematics awarded to Dr. Bath.

- Dr. Joan Gosink, Engineering, and Dr. Bath will be attending a Women in Engineering Program Advocates Network (WEPAN) seminar in Seattle in September. The purpose of this is to organize a Women in Engineering program for CSM.

- Drs. Gosink, Bath, Olds, and Dr. Hugh Murphy have a preliminary proposal in to the National Science Foundation on **Experimental Projects to Increase and Enhance Opportunities for Women in Engineering Careers.** This program would target female middle school students, undergraduates, graduate students, and faculty.

- We hope to acquire the PRE-SUMMET program. It is based on our highly successful SUMMET program but will fill the gap for eighth and ninth grade students. If the proposal for this program is funded, CSM will provide pre-collegiate programs for students in eighth through twelfth grades.

- CSM will continue to support and participate in organizations with the goal of encouraging minority and female students into graduate programs in science and engineering fields.

- We will aggressively continue to seek funds and participation in minority/gender engineering programs with the intent to increase the numbers of minority and female students in engineering fields.

- CSM will actively recruit qualified minority and female students for attendance at CSM and aggressively pursue financial support in order to insure their continuation.

- For the 1994 fall semester, several selected required core classes will be comprised of a disproprortinate percentage of minority students, approaching 50% of the enrollment in some instances. This is an experiment based on the assumption that this will increase the students' comfort level thereby increasing their potential for success.

FACULTY

GOAL: To attain a level of faculty diversity which matches that of the student body.

As previously stated the current CSM overall student body contains 10% minorities; 1.5% Black, 4.1% Hispanic, 0.9% Native American and 3.3% Asian/Pacific Islander. The regular full-time CSM faculty consists of 7% minorities; 0.6% Black, 3.2% Hispanic, 0% Native American and 3.2% Asian/Pacific Islander. In their Almanac issue dated August 25, 1993, the Chronicle of Higher Education (page 34) reports that among doctoral institutions nationwide the faculty breaks down as follows: 1.8% Blacks, 1.1% Hispanic, 0.6% Native American and 4.5% Asian/Pacific Islander, for a total of 8%. Considering the small absolute numbers making up our percentages, we are close to the national figures. In many instances, the employment of one additional faculty member would place us at or above the national averages.

Because of the specialized nature of CSM, we experience unique recruiting problems. According to the 1992 Summary Report of Doctorate Recipients from U.S. Universities (National Academy of Science, National Academy of Engineering and the National Research Council), the following statistics are available regarding the awarding of doctorates in engineering:

- 5437 doctorates were awarded in 1992 in all fields of engineering.

- Forty-six (46) percent, or 2510 engineering of the 5437 doctorates were awarded to U.S. citizens or non-citizens with permanent visas.

- Women represented only 9% of the total 5437. Figures are not available on women recipients by citizenship.

- Minorities represent 23% of the 2510 doctorates with a breakdown as follows; 1.9% (48) Black, 2.9% (72) Hispanic, 0.4% (11) Native American and 17.8% (447) Asian/Pacific Islander.

These numbers represent an increase over previous years, but they do not reflect actual numbers of individuals who are willing to consider teaching at a university as a career option. Nor do these figures take into account the fields of engineering which are not compatible with those here at CSM.

In order to compete for minority and female faculty in the face of the severe shortage that exists nationwide, we have implemented the following recruiting efforts:

- Search committees are encouraged to advertise in national minority professional publications.

- Search committee members are encouraged to make personal contact with women and minorities in the field within which the vacancy exists to solicit their application.

- CSM expects search committees to take special recruiting steps to seek minority and female applicants.

- We have also made available to search committees the Minority and Women Doctoral Directory.

- CSM has joined one of the many organizations working to improve the availability of minorities in engineering, the Coalition to Increase Minority Doctorates (CIMD), headquartered in Arizona.

- We require a second review by search committees of minority and female applicants to consider the potential for advancing the names of qualified minority and female applicants to the "short list" for further consideration;

Recruiting efforts have increased the number of female and minority faculty. Since July, 1993, approximately 30% of the regular administrative and academic faculty vacancies have been filled by minorities or women. However, given the climate of competition with other universities and industries, the actual number of vacancies which occur and the small numbers of qualified applicants in many of the fields in which we offer degrees, increasing our minority and female representation has been slower than we hoped.

The recruitment activities mentioned above will continue and new efforts will be implemented as they are identified. These intensified recruitment measures along with the activities CSM is involved in with the students should eventually increase the availability of qualified minority and female faculty.

ENVIRONMENT

GOAL: To create and maintain an environment where all ethnicities and genders feel empowered and one that encourages their participation free of discrimination.

In order to reach and maintain our goal of a culturally diverse, accepting environment, CSM has taken the following steps and will continue to support these actions/activities:

- CSM has implemented an Affirmative Action Policy and Unlawful Discrimination Complaint Procedure which covers students, classified employees, contract employees, applicants for admission and applicants for employment (see attached Appendix A). This policy provides a method for reporting alleged violations and a review mechanism for bringing the allegation to appropriate closure.

- Sexual Harassment workshops are offered on a regular basis to inform the CSM community as to appropriate behavior and their rights and responsibilities.

- Visiting lecturers, seminars and cultural programs are offered to raise the awareness of other cultures and varying lifestyles.

- A Sexual Harassment Policy and Sexual Harassment Complaint Procedure (Appendix B) has been adopted for all members of the CSM community to provide the vehicle for reporting alleged violations.

- All allegations of inappropriate behavior are vigorously investigated in order to correct the behavior, if necessary, and to assure the plaintiff that the policies are taken seriously.

- CSM will establish and/or maintain mentor programs to support current minority staff, faculty and students in order to encourage their continuation.

The Colorado School of Mines has made and continues to make notable strides in the area of cultural diversity. The CSM community as a whole has embraced the philosophy that diversity of experiences, ideas and beliefs is not only desirable but critical to the vitality and existence of an institution of higher education in today's world. We believe our programs and actions will assure that we have continued success toward our goals.

COLORADO SCHOOL OF MINES

AFFIRMATIVE ACTION POLICY

AND

UNLAWFUL DISCRIMINATION COMPLAINT PROCEDURE

I. AFFIRMATIVE ACTION POLICY

Promulgated by the CSM Board of Trustees on March 13, 1992.

Attendance and employment at CSM are based solely on merit and fairness. Discrimination on the basis of age, sex, race, color, religion, national origin, handicap, Vietnam-era or disabled veteran status is prohibited. No discrimination in admission, application of academic standards, financial aid, scholastic awards, promotion, salary, benefits, transfers, reductions in force, terminations, reemployment, professional development, or conditions of employment shall be permitted. The administration of CSM shall formulate and adopt a complaint procedure which shall contain a method for reporting alleged violations of this policy and a review mechanism for the impartial determination of the merits of complaints alleging unlawful discrimination.

II. PERSONS WHO MAY FILE AN UNLAWFUL DISCRIMINATION COMPLAINT

An unlawful discrimination complaint may be filed by an individual described in one of the categories below:

A. Any member of the CSM community, including classified personnel, contract employees, and students as well as any applicant for employment or admission, who believes that he or she has been discriminated against by CSM, a branch of CSM, or another member of the CSM community on account of race, color, religion, national origin, sex, age, handicap, or Vietnam-era or disabled veteran status; or

B. Any person who believes that he or she has been threatened with or subjected to duress or retaliation by CSM, a branch of CSM, or a member of the CSM community as a result of (1) opposing any unlawful discriminatory practice; (2) filing a complaint hereunder; (3) representing a Complainant hereunder; or (4) testifying, assisting, or participating in any manner in an investigation, proceeding, hearing, or lawsuit involving unlawful discrimination; or

C. The Affirmative Action Officer or the Director of Legal Services may initiate an informal or formal unlawful discrimination complaint hereunder in the name of CSM if either of them deem it to be in the best interest of CSM to do so.

III. INFORMAL UNLAWFUL DISCRIMINATION COMPLAINT RESOLUTION PROCESS

At the written request of an individual who has come forward with a complaint alleging unlawful discrimination, hereinafter referred to as the "Complainant," the Affirmative Action Officer shall assist in an attempt to resolve the complaint in an informal manner. The informal unlawful discrimination complaint resolution process shall consist of an informal discussion between the Complainant and the individual or a representative of the entity accused of unlawful discrimination, hereinafter referred to as the "Respondent." The Affirmative Action Officer shall act as a mediator during this process, which shall be calculated to bring the complaint to the attention of the Respondent and elicit the voluntary cooperation of the Respondent in settling the matter. By attempting to resolve the unlawful discrimination complaint in an informal manner pursuant to the terms of this subsection, the Complainant shall not waive any rights to subsequently pursue the complaint through the formal unlawful discrimination complaint procedure set forth below.

IV. PROCEDURE FOR INITIATION OF FORMAL UNLAWFUL DISCRIMINATION COMPLAINTS

A. Purpose

The purpose of the CSM Formal Unlawful Discrimination Complaint Procedure is to provide a formal mechanism for the prompt and fair internal resolution of complaints alleging unlawful discrimination. The procedure outlined below shall be the exclusive forum for the formal resolution of unlawful discrimination complaints at CSM.

B. Where to file an Affirmative Action Complaint

All complaints by non-students alleging unlawful discrimination or retaliation shall be filed in writing at the Office of Human Resources and Affirmative Action located on the second floor of Guggenheim Hall. Complaints by students alleging unlawful discrimination or retaliation may be filed in writing at the Affirmative Action Office or the Student Development Center. The Director of the Student Development Center shall promptly forward all complaints filed by students alleging unlawful discrimination or retaliation to the Affirmative Action Officer for handling in accordance with the provisions set forth below.

C. Time Limits

All complaints alleging unlawful discrimination or retaliation must be filed within sixty days from the date upon which the incident, occurrence, or other action alleged to constitute unlawful discrimination or retaliation occurred. However, if the alleged discrimination or retaliation is of a continuing nature, a complaint may be filed at any time.

D. Contents of Complaint

A complaint alleging unlawful discrimination or retaliation must be signed by the Complainant and set forth specific factual matters believed to constitute unlawful discrimination or retaliation. The complaint shall name as Respondent the individual or entity

whom the Complainant believes to have committed, participated in, or encouraged the discrimination or retaliation. The complaint shall also include a brief statement describing the relief requested by the Complainant.

E. Fulfillment of Complaint Prerequisites

As soon as practicable after receipt of a complaint, the Affirmative Action Officer shall submit the complaint to the Director of Legal Services, who shall examine it and determine if the prerequisites outlined above have been fulfilled. If the prerequisites have not been fulfilled, the Director of Legal Services shall inform the Complainant of the specifics of such determination in writing. Unless the time limitations set forth above have lapsed prior to the initial filing of the complaint, the Complainant shall have the opportunity to correct any deficiencies and refile the complaint. If the prerequisites have been fulfilled, the complaint will be handled as set forth below.

F. Choice of Remedies

No Complainant shall be permitted to simultaneously file an unlawful discrimination claim under the CSM Affirmative Action Policy and Unlawful Discrimination Complaint Procedure and a sexual harassment claim under the CSM Sexual Harassment Policy and Complaint Procedure against the same individual arising out of an identical set of facts. In such a situation, a Complainant shall be entitled to file his or her claim under either of the above-mentioned policies.

V. AFFIRMATIVE ACTION COUNCIL

A. Membership

The Affirmative Action Council, hereinafter referred to as the "Council," shall consist of the CSM Affirmative Action Officer, who shall serve in an ex-officio capacity, plus ten voting members chosen in the following manner: two academic faculty members nominated by the Faculty Senate and appointed by the President; one administrative faculty member nominated by the Vice President for Academic Affairs and appointed by the President; one administrative faculty member nominated by the Vice President for Business Affairs and appointed by the President; one administrative faculty member nominated by the Vice President for Student Life and appointed by the President; two classified employees nominated by the Classified Employees Advisory Council and appointed by the President; one graduate student nominated by the Dean of Graduate Studies and Research and appointed by the President; and two undergraduate students nominated by the Associated Students of Colorado School of Mines and appointed by the President. A chairperson of the Council shall be elected by the voting members on an annual basis.

B. Terms

The student members of the Council shall serve for one-year terms. The non-student members of the Council shall serve for two-year terms, which shall be staggered such that one-half of such terms expire in even-numbered years and the remainder expire in odd-numbered years.

C. Duties

The Council shall periodically review the CSM Affirmative Action Plan and propose modifications thereto, as deemed appropriate. Additionally, the Council shall act as an advisory body to the President and various campus groups regarding Affirmative Action matters at CSM and serve as the hearing panel for formal unlawful discrimination complaints at CSM.

VI. PREHEARING PROCEDURES FOR FORMAL UNLAWFUL DISCRIMINATION COMPLAINTS

A. Notification of Affirmative Action Council

As soon as practicable after a determination has been made that the complaint is sufficient pursuant to subsection IV.E. above, the Director of Legal Services shall so inform the chairperson of the Council and provide the chairperson with a copy of the complaint.

B. Acknowledgment of Complaint and Notification of Respondent

As soon as practicable after being informed of the complaint pursuant to subsection VI.A. above, the chairperson of the Council shall send a letter to the Complainant acknowledging receipt of the complaint. At the same time, the chairperson shall provide the Respondent with a copy of the complaint and notify the Respondent in writing of the requirements set forth in subsection VI.C. below.

C. Response to Complaint

Within ten days from the date of receipt of a copy of the complaint, the Respondent shall file with the chairperson a response in which the allegations contained in the complaint are admitted or denied. The chairperson shall provide the Complainant with a copy of the response as soon as practicable. If the response contains a denial of one or more of the allegations contained in the complaint, the process shall proceed with the selection of a hearing panel as set forth in subsection VI.D. below. If no timely response is received, or if the response admits the allegations in their entirety, the hearing panel shall submit a statement of recommended action to the President along with the case file within fifteen days from the deadline for submission of a response specified herein. The President shall then issue a decision in accordance with subsection IX.D. below.

D. Selection of Hearing Panel

A hearing panel consisting of five voting members of the Council shall be selected in the following manner:

1. If the Respondent is an academic faculty member, both Council members who are academic faculty members shall serve on the hearing panel along with three other Council members chosen by the chairperson in a random drawing.

2. If the Respondent is an administrative faculty member, all three Council members who are administrative faculty members shall serve on the hearing panel along with two other Council members chosen by the chairperson in a random drawing.
3. If the Respondent is a classified employee, both Council members who are classified employees shall serve on the hearing panel along with three other Council members chosen by the chairperson in a random drawing.
4. If the Respondent is a graduate student, the Council member who is a graduate student shall serve on the hearing panel along with four other Council members chosen by the chairperson in a random drawing.
5. If the Respondent is an undergraduate student, both Council members who are undergraduate students shall serve on the hearing panel along with three other Council members chosen by the chairperson in a random drawing.

E. Replacement of Excused Panel Members

Panel members may be excused on account of conflict of interest, health, or unavoidable absence from campus. An excused panel member shall be replaced by another Council member chosen in a random drawing.

F. Selection of Chief Panel Member

After a hearing panel has been chosen, the panel members shall elect a chief panel member from their number who shall preside throughout the prehearing process, the hearing, and the posthearing process.

G. Setting of Hearing Date

After a chief panel member has been chosen, a hearing date shall be set with reasonable consideration given to the schedules of the individuals concerned. The chief panel member shall set a date for the hearing, which shall occur no less than thirty days, nor more than ninety days after the date upon which the formal complaint was filed with the Affirmative Action Officer. Once set, the hearing date may be rescheduled only with the concurrence of the Complainant, the Respondent, and the chief panel member.

H. Participation of Attorneys

Either party may engage the services of an attorney to assist in document preparation or case preparation. However, an attorney may not enter an appearance or formally participate in the prehearing process on behalf of a party.

I. Legal Advice for Hearing Panel

If the hearing panel desires legal advice at any time during the prehearing process, the hearing, or the posthearing process, the chief panel member shall request same from the Director of Legal Services. The Director shall provide such advice unless the Director is actively involved in the case on behalf of one of the parties. In such event, the chief panel member shall request the desired legal advice from the appropriate Assistant Attorney General assigned

to CSM, whose name and telephone number shall be provided to the chief panel member by the Director.

J. Prehearing Discovery

Informal discovery, or the exchange between the parties of information relevant to the case, is encouraged. If the parties cannot resolve such issues informally, either party may move the chief panel member up to ten days prior to the hearing date to enter an order compelling discovery upon a showing of the relevance of the requested information and the necessity of such information to case preparation. The other party may oppose such request by showing that the requested information is irrelevant, unnecessary to the movant's case preparation, or privileged according to law.

K. List of Hearing Issues

After examining the prehearing statements of both parties, the hearing panel shall prepare a list of issues to be resolved through the hearing and distribute such list to the parties no later than two days prior to the hearing date. The panel may list issues contained in the prehearing statement of either party or relevant issues not contained in the prehearing statement of either party. However, since the jurisdiction of the hearing panel is limited to hearing claims of unlawful discrimination, only issues directly related to the Complainant's claim of unlawful discrimination may be placed on the list of issues. The list of issues generated pursuant to this subparagraph shall be binding upon the subsequent hearing and shall form the standard against which all relevancy arguments shall be weighed.

VII. PREHEARING STATEMENTS

A. Contents of Prehearing Statements

Each party shall file a Prehearing Statement containing the following components:

1. Summary of the Argument: A concise statement summarizing the case from the position of the submitting party;
2. List of Issues: A list of the issues which the submitting party wishes the hearing panel to resolve;
3. List of witnesses: A list of witnesses to be presented at the hearing along with a summary of the anticipated testimony of each witness; and
4. Photocopies of exhibits: Photocopies of each exhibit to be presented at the hearing.

B. Deadlines for Prehearing Statements

The Complainant shall file a prehearing statement with the hearing panel and provide a copy to the opposing party no later than ten days prior to the hearing date. The Respondent shall file a prehearing statement with the hearing panel and provide a copy to the opposing party no later than five days prior to the hearing date. If the hearing date is rescheduled, these time limits shall apply to the rescheduled hearing date.

C. Limitations Imposed by Prehearing Statements

Neither party shall make an argument during the hearing which is inconsistent with the arguments set forth in the summary of the argument section of his or her prehearing statement. Neither party shall introduce any witnesses or exhibits at the hearing which are not listed in his or her prehearing statement. All exhibits listed in the prehearing statements shall be deemed genuine and admissible unless successfully challenged prior to the hearing.

D. Amendments to Prehearing Statements

Up to two days prior to the hearing date, either party may request the chief panel member to permit amendments to his or her prehearing statement upon a showing of good cause and lack of prejudice to the opposing party. Any party filing an amended prehearing statement shall provide a copy thereof to the opposing party no later than the filing deadline imposed by the order granting leave to amend.

VIII. HEARING PROCEDURES FOR FORMAL UNLAWFUL DISCRIMINATION COMPLAINTS

A. Participation of Attorneys

Either party may engage the services of an attorney to assist in document preparation or case preparation. However, an attorney may not enter an appearance or formally participate in the hearing on behalf of a party.

B. Burden and Standard of Proof

The Complainant shall bear the burden of proof throughout the case. The standard of proof which the Complainant must meet to sustain the burden of proof shall be the preponderance of the evidence standard. The "preponderance of the evidence" standard shall be deemed met if the panel believes that it is more likely than not that the facts at issue occurred. The "facts at issue" shall include all facts which are required to be proven by the party bearing the burden of proof in order for such party to prevail.

C. Order of Presentation

Since the Complainant bears the burden of proof, that party shall present his or her case first. After the Complainant has finished, the Respondent shall present his or her case.

D. Outline of Hearing

The hearing shall proceed according to the following general outline:

1. Complainant's Opening Statement
2. Respondent's Opening Statement (unless reserved)
3. Complainant's Case

4. Respondent's Opening Statement (if reserved)
5. Respondent's Case
6. Complaint's Rebuttal Case (unless waived)
7. Respondent's Rebuttal Case (only if Complainant presents a rebuttal case and unless waived)
8. Complainant's Closing Argument
9. Respondent's Closing Argument
10. Complainant's Rebuttal Argument (unless waived)

E. Inapplicability of Strict Evidentiary Rules

Strict legal evidentiary rules shall not apply during the hearing. The chief panel member shall rule on the admissibility of disputed evidence with primary consideration given to the relevance, reliability, and probative value of proffered evidence.

F. Witness Examination Procedure

Each witness shall be directly examined by the party on whose behalf the witness has appeared to testify. Upon the conclusion of the direct examination of each witness, the opposing party shall be permitted the right of cross-examination. The chief panel member may permit redirect and recross examination. However, an identical examination procedure shall be utilized for all witnesses testifying in a given hearing. Hearing panel members may interject questions at any time during the direct, cross, redirect, or recross examinations.

IX. POSTHEARING PROCEDURES FOR FORMAL UNLAWFUL DISCRIMINATION COMPLAINTS

A. Recommendation of the Hearing Panel

Within a reasonable time after the conclusion of the hearing, the hearing panel shall confer among themselves and vote upon a recommended course of action. The panel members holding a majority point of view shall designate one of their number to write a recommendation reflecting their opinion. The panel members holding a minority point of view, if any, may issue a dissenting recommendation in a similar fashion.

B. Contents of Recommendation

The recommendation of the hearing panel shall include the following components:

1. Statement Regarding Burden of Proof: A statement regarding whether or not the hearing panel believes that the burden of proof borne by the Complainant has been sustained;
2. Findings of Fact: A list of the relevant facts found by the hearing panel upon which the recommendation is based;
3. Legal Conclusions: A list of the legal conclusions of the hearing panel upon which the determination of the issue of the occurrence of unlawful discrimination is based; and

4. Recommended Action: A statement regarding the relief for the Complainant, if any, that is being recommended by the hearing panel.

C. Issuance of Recommendation

The recommendation of the hearing panel shall be issued to the parties and delivered to the President along with the case file within fifteen days after the conclusion of the hearing.

D. Decision of President

The President shall examine the case file, consider the recommendation of the hearing panel, and issue a final written decision in the matter. The President shall possess the authority to affirm, reverse, or modify the recommendation of the hearing panel or to remand the matter to the panel for further proceedings or consideration. In the decision, the President may provide appropriate relief to the Complainant and may impose appropriate disciplinary action upon the Respondent. The decision of the President shall be delivered to the parties and the hearing panel within fifteen days from the date of the President's receipt of the recommendation and case file from the hearing panel, unless the President is unavailable for a significant amount of time during this period.

E. Presidential Unavailability

The term "unavailable," as utilized in this subsection and subsection IX.D. above, shall be defined to mean out of town, medically incapacitated, or engaged in important CSM business to the extent that sufficient time cannot be devoted to decisionmaking hereunder. If the President is unavailable for a significant period of time during the decisionmaking period, a letter shall be sent to the parties advising them of that fact as well as the anticipated date of presidential availability. In such event, the decision shall be due fifteen days from the date upon which the President becomes available. The President shall be the sole judge of presidential unavailability hereunder.

F. Appeal of Presidential Decision

There shall be no appeal from the final decision of the President. A party aggrieved by the decision of the President may file a complaint with the appropriate equal opportunity enforcement agency or pursue other available legal remedies.

COLORADO SCHOOL OF MINES

SEXUAL HARASSMENT POLICY

AND

SEXUAL HARASSMENT COMPLAINT PROCEDURE

I. SEXUAL HARASSMENT POLICY

Promulgated by the CSM Board of Trustees on March 13, 1992.

A. Definition of Sexual Harassment

Sexual harassment consists of unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or scholastic endeavors; (2) submission to or rejection of such conduct by an individual is used as the basis for employment or academic decisions affecting the individual; or (3) such conduct has the purpose or effect of unreasonably interfering with an individual's work or school performance, or creating an intimidating, hostile, or offensive working or studying environment.

B. Sexual Harassment Policy Statement

CSM wishes to foster an environment for its students and employees which is free from all forms of sexual harassment, sexual intimidation, and sexual exploitation. Accordingly, CSM will not tolerate sexual harassment and will take all necessary measures to deter such misconduct and discipline violators of this policy with appropriate sanctions. Furthermore, retaliation in any form against an individual for reporting sexual harassment or cooperating in a sexual harassment investigation is strictly prohibited. Such retaliation shall be dealt with as a separate instance of sexual harassment. The administration of CSM shall formulate and adopt a complaint procedure which shall contain a method for reporting alleged violations of this policy and a review mechanism for the impartial determination of the merits of complaints alleging sexual harassment.

C. Sanctions for Sexual Harassment

Appropriate sanctions may be imposed upon an employee or student who has sexually harassed another. The term "Perpetrator" shall be utilized herein to refer to such a person. The sanctions may include one or more of the following: verbal reprimand and warning, written reprimand and warning, student probation, suspension from registration, monetary fine, suspension without pay, expulsion, or termination. In determining appropriate sanctions

for the offense, the decisionmaker shall consider the severity of the offense, aggravating and mitigating factors, and the Perpetrator's previous history of sexual harassment offenses. If the decisionmaker concludes that a lack of comprehension of the concept of sexual harassment is a factor in the offense, the Perpetrator can also be required to attend a sexual harassment seminar or workshop.

II. PERSONS WHO MAY FILE A SEXUAL HARASSMENT COMPLAINT

A sexual harassment complaint may be filed by an individual described in one of the categories below:

A. Any person who believes that he or she has been sexually harassed by a member of the CSM community, including classified personnel, contract employees, and students; or

B. Any person who believes that he or she has been threatened with or subjected to duress or retaliation by a member of the CSM community as a result of (1) opposing any perceived sexual harassment; (2) filing a complaint hereunder; (3) representing a Complainant hereunder; or (4) testifying, assisting, or participating in any manner in an investigation, proceeding, hearing, or lawsuit involving sexual harassment; or

C. The Affirmative Action Officer or the Director of Legal Services may initiate an informal or formal sexual harassment complaint hereunder in the name of CSM if either of them deem it to be in the best interest of CSM to do so.

III. INFORMAL SEXUAL HARASSMENT COMPLAINT RESOLUTION PROCESS

At the written request of an individual who has come forward with a sexual harassment complaint, hereinafter referred to as the "Complainant," the Affirmative Action Officer shall assist in an attempt to resolve the complaint in an informal manner. The informal sexual harassment complaint resolution process shall consist of an informal discussion between the Complainant and the individual accused of sexual harassment, hereinafter referred to the "Respondent." The Affirmative Action officer shall act as a mediator during this process, which shall be calculated to bring the complaint to the attention of the Respondent and elicit the voluntary cooperation of the Respondent in settling the matter. By attempting to resolve the sexual harassment complaint in an informal manner pursuant to the terms of this subsection, the Complainant shall not waive any rights to subsequently pursue the complaint through the formal sexual harassment complaint procedure set forth below.

IV. FORMAL SEXUAL HARASSMENT COMPLAINT PROCEDURE

A. Purpose

The purpose of the Formal Sexual Harassment Complaint Procedure is to provide a formal mechanism for the prompt and fair internal resolution of complaints alleging sexual

harassment. The procedure outlined below shall be the exclusive forum for the formal resolution of sexual harassment complaints at CSM.

B. Where to file a Sexual Harassment Complaint

All complaints by non-students alleging sexual harassment or retaliation shall be filed in writing at the Office of Human Resources and Affirmative Action located on the second floor of Guggenheim Hall. Complaints by students alleging sexual harassment or retaliation may be filed in writing at the Affirmative Action Office or the Student Development Center. The Director of the Student Development Center shall promptly forward all complaints filed by students alleging sexual harassment or retaliation to the Affirmative Action Officer for handling in accordance with the provisions set forth below.

C. Time Limits

The complaint must be filed within sixty days from the date upon which the incident, occurrence, or other action alleged to constitute sexual harassment or retaliation occurred. However, if the alleged sexual harassment or retaliation is of a continuing nature, the complaint may be filed at any time.

D. Contents of Complaint

The complaint must be signed by the Complainant and set forth specific factual matters believed to constitute sexual harassment or retaliation. The Complaint shall name as Respondent the individual whom the Complainant believes to have committed, participated in, or encouraged the sexual harassment or retaliation. The complaint shall also include a brief statement describing the relief requested by the Complainant.

E. Fulfillment of Complaint Prerequisites

As soon as practicable after receipt of the complaint, the Affirmative Action Officer shall submit the complaint to the Director of Legal Services, who shall examine it and determine if the prerequisites outlined above have been fulfilled. If the prerequisites have not been fulfilled, the Director of Legal Services shall inform the Complainant of the specifics of such determination in writing. Unless the time limitations set forth above have lapsed prior to the initial filing of the complaint, the Complainant shall have the opportunity to correct any deficiencies and refile the complaint. If the prerequisites have been fulfilled, the complaint will be handled as set forth below.

F. Choice of Remedies

No Complainant shall be permitted to simultaneously file an unlawful discrimination claim under the CSM Affirmative Action Policy and Unlawful Discrimination Complaint Procedure and a sexual harassment claim under the CSM Sexual Harassment Policy and Complaint Procedure against the same individual arising out of an identical set of facts. In such a situation, a Complainant shall be entitled to file his or her claim under either of the above-mentioned policies.

G. Notification of CSM Management Personnel

As soon as practicable after a determination has been made that the complaint is sufficient pursuant to subsection IV.E. above, the Director of Legal Services shall notify CSM Management Personnel of the complaint and provide them with a copy thereof. For the purpose this policy, the term "CSM Management Personnel" shall refer to the President, the Vice President in whose area the Respondent is employed or enrolled, and, if applicable, the Respondent's immediate supervisor. However, if the President is the Respondent, the term "CSM Management Personnel" shall refer exclusively to the Board of Trustees, and if the Respondent is a Vice President, the term "CSM Management Personnel" shall refer exclusively to the President.

H. Acknowledgment of Complaint and Notification of Respondent

As soon as practicable after being informed of the complaint pursuant to subsection IV.G. above, the Vice President shall send a letter to the Complainant acknowledging receipt of the complaint. At the same time, the Vice President shall notify the Respondent of the complaint in writing and provide the Respondent with a copy thereof. If the President is the Respondent, the President of the Board of Trustees shall perform the above duties. If the Respondent is a Vice President, the President shall perform these duties.

I. Investigation Authorization Form

Prior to any investigation of the complaint, the Complainant shall be required to execute a Sexual Harassment Complaint Investigation Authorization Form authorizing CSM to investigate the matter.

J. Investigation of Complaint

The Director of Legal Services and the Affirmative Action Officer shall jointly investigate the complaint by examining relevant documents, if any, and interviewing witnesses and other individuals designated by either party. The investigation shall be conducted in an expeditious and confidential manner with due regard to thoroughness and fairness to both parties.

K. Confidentiality of Investigative Materials

All materials and documents prepared or compiled by the Director of Legal Services during the course of investigating a sexual harassment complaint hereunder shall be kept confidential to the fullest extent of the law in order to protect interviewees and promote candor.

L. Alternate Investigators

If either the Director of Legal Services or the Affirmative Action Officer is the Complainant or the Respondent hereunder, or is otherwise unavailable, the President shall appoint an alternate investigator.

M. Report of Findings and Confidential Recommendation

As soon as practicable after the conclusion of the investigation, the Director of Legal Services shall prepare and submit a report of findings and a confidential recommendation to CSM Management Personnel and the Affirmative Action Officer. The report of findings shall be provided to the Complainant and Respondent within a reasonable time following the issuance of a decision pursuant to subsection IV.N. below. The confidential recommendation shall not be released to the Complainant or the Respondent without written authorization from the President. The Affirmative Action Officer shall submit a separate letter to CSM Management Personnel and the Director of Legal Services which contains a statement of agreement or disagreement with the findings and recommendation of the Director of Legal Services.

N. Resolution of the Complaint

Following consultations with the President, the Director of Legal Services, and the Affirmative Action Officer, the Vice President shall issue a final decision regarding the complaint. The decision shall be addressed to the Complainant and shall contain a statement of whether or not sexual harassment was found to have occurred, the remedies to be provided to the Complainant, if any, and the sanctions to be imposed upon the Respondent, if any. A copy of the decision shall be provided to the Respondent. If sanctions are to be imposed upon the Respondent, the Vice President shall notify the Respondent of that fact in a separate letter. If the President is the Respondent, the President of the Board of Trustees shall perform the above duties. If the Respondent is a Vice President, the President shall perform these duties.

O. Appeal of Final Decision

There shall be no appeal from the final decision rendered pursuant to subsection IV.N. above. A party aggrieved by the decision may file a complaint with the appropriate administrative agency or pursue other available legal remedies.

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number II-j
Presented by Ansell

Subject: 1994-95 Board meeting schedule

Background Information:

Please see the enclosed schedule.

Action Motion Requested:

COLORADO SCHOOL OF MINES
BOARD OF TRUSTEES
MEETING SCHEDULE

Date	Time	Place
September 9, 1994	9:00 a.m.	Boardroom Guggenheim Hall
October 14, 1994	9:00 a.m.	Boardroom Guggenheim Hall
December 16, 1994	9:00 a.m.	Boardroom Guggenheim Hall
February 10, 1995	9:00 a.m.	Boardroom Guggenheim Hall
March 10, 1995	9:00 a.m.	Boardroom Guggenheim Hall
May 4, 1995	1:30 p.m.	Boardroom Guggenheim Hall
June15, 1995	7:00 p.m.	Aspen Lodge
September 15, 1995	9:00 a.m.	Boardroom Guggenheim Hall
October 13, 1995	9:00 a.m.	Boardroom Guggenheim Hall
December 15, 1995	9:00 a.m.	Boardroom Guggenheim Hall

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number III-a
Presented by Copeland

Subject: Faculty Senate Report

Background Information:

The Faculty Senate has not met over the summer months, therefore there will be no report.

Action Motion Requested:

Information Only

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number III-b
Presented by Carr

Subject: Legislative Report

Background Information:

Action Motion Requested:

Information Only

Colorado School of Mines
Golden, CO 80401-1887
303/273-3000

COLORADO SCHOOL OF MINES
GOLDEN, COLORADO 80401-1887

MEMORANDUM

TO: Board of Trustees

FROM: Joanne Carr

DATE: September 1, 1994

SUBJECT: **Legislative report**

The Colorado Legislature's Capital Development Committee will have approximately $12 million to spend this year, after the "no choice" items are funded. From this amount, CSM is requesting $1.06 million for the architectural and engineering phase of the Hill Hall renovation.

CCHE's statewide enrollment planning task force has completed its work and will recommend options to the legislature for accommodating the expected twenty-two percent enrollment growth. The first option says that the state will increase overall funding into the higher education system at a rate that keeps pace with inflation and enrollment increases, discounted by some agreed on factor that reflects efficiencies higher education institutions can gain through operating changes. We believe it isn't realistic to expect big efficiency savings, and there is a risk that the legislature may stop at this "fix", which falls short of an adequate funding level. The second proposal would be to increase tuition charges to students to fifty percent of actual cost at each institution, from the present level of thirty percent, supposedly with an offsetting increase in financial aid. We believe this solution will be politically unacceptable. We also have the experience of operating at almost the forty percent level and we know how expensive this solution is in terms of financial aid. We don't think it's workable across the higher education system. The third option is voucher system, providing $2,400 per student. Because this amount is low when matched against the costs at research institutions, it effectively cuts enrollment at these institutions.

CSM's proposal is to use the present admissions index process to guide more of the enrollment growth into the lower cost parts of the higher education system, that is, away from the research universities and toward the community colleges.

CCHE will hold its December meeting on the CSM campus (Dec 1, 1994).

The City of Golden has complained again about our parking situation. We have responded to them with an inventory of our on-campus parking relative to needs. We estimate a daily need to accommodate 2,600 cars, and we have 2,900 parking spaces, including 750 on-street spaces within the campus boundaries. Most of the parking complaints come from residents of the Golden Historic District (residential area immediately north of campus).

Research done at CSM's High Altitude Fuels Center will provide data which is part of the basis for the state's response to the Clean Air Act. The Center has been asked to work with the City and County of Denver to test bus fleets at DIA and with Colorado Department of Health to develop input for the emissions model being used to set current emissions inventories. These contracts and others are beginning to provide a solid operating basis for the Center. In addition, we have just heard from Washington that the Senate/House conference committee has settled on $300,000 as the '95 amount for the Center in the EPA research budget.

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number III-c
Presented by Dr. Schowengerdt

Subject: Curriculum Revision Update

Background Information:

Dr. Schowengerdt will update the Board on the status of the curriculum revision. The Curriculum Reform Steering Committee members are as follows:

Frank Schowengerdt, Chair
Barbara Olds - Liberal Arts and International Studies/McBride Honors Program
Phil Romig - Geophysics
Jerry Higgins - Geology and Geological Engineering
Mike Pavelich - Chemistry and Geochemistry/Office of Teaching Effectiveness
John Trefny - Physics
Barbara Bath - Mathematical and Computer Sciences
Nigel Middleton - Engineering
Jim Ely - Chemical Engineering and Petroleum Refining

Action Motion Requested:

Information only.

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number III-d
Presented by Cake

Subject: Construction on campus

Background Information:

Tim Cake, Interim Director of Plant Facilities, will present the report.

Action Motion Requested:

Information only.

Colorado School of Mines
Plant Facilities Administered Construction Projects
Status Report
September 9, 1994

Capital Construction Project

Coolbaugh Hall Renovation

Budget: $13.9 million

Schedule:

September 1994, (original building):

September 12, 1994, Relocation move to new wing begins.

Decontamination of the second and third floors is complete. First floor will begin after move.

Remodeling of second and third floors will begin.

September 26, 1994, teaching labs will begin in new wing.

Spring 1995:

Project completion.

Controlled Maintenance Projects

Campus Utility Tunnel Replacement
Campus Steam Trap Replacement
Campus Heating Plant Steam Service Station Upgrade
Landscaping

Budget: $1.7 million.

Schedule:

September 1994:

Underground work in tunnel and surface work is complete.

The punch list process is underway. Corrections on light poles and drainage are being addressed.

Work in progress includes steam trap replacement and power plant adaptations to new system.

Controlled Maintenance Projects (Cont.)

Campus Roof Repairs and Replacement	$724K
Volk Gymnasium Floor Replacement/Bleacher Repair	$150K

"In House" Construction Projects"

Campus Fire Alarm Monitoring System	$44K
Swenson Field Renovation Project	$95K
Electronic Microscope Facility (Hill Hall)	$253K
Hill Hall Lab Room 275 Exhaust System	$12.5K
Computer Network Distribution System	$12.5K
Berthoud Hall Control Modification to Staefa System II	$8.5K
Library Burglary/Alarm System	$35K
Brown Hall Storage Facility Enclosure	$21K
Survey Field Storage Facility Addition	$55K

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number III-e
Presented by Cheuvront

Subject: Student Center renovation status report

Background Information:

Harold Cheuvront will present the report.

Action Motion Requested:

Information only.

CSM
BOARD OF TRUSTEES
AGENDA ITEM

Date of Meeting 9/9/94
Item Number IV
Presented by Schowengerdt/Liberatore

Subject: CSM Sabbatical Leave Policy

Background Information:

The CSM administration apologizes for the lateness and lack of prior notice of this submitted item. The reason for this timing is that we have recently become aware of the fact that on or before October 1, 1994, The Board of Trustees is required by a new statute to implement a sabbatical leave policy incorporating the requirements enumerated therein. Enclosed with the draft policy are copies of this statute, C.R.S. 23-5-123, (1998), as well as the relevant section of CSM's current faculty handbook addressing the subject of sabbatical leave. The draft policy attempts to incorporate the requirements listed in C.R.S. 23-5-123, (1988) with complementary provisions from our current handbook.

Action Motion Requested:

Approval of proposed CSM Sabbatical Leave Policy