

CCHE Agenda  
January 9, 2001  
Gottesfeld Room, University of Denver  
Denver, Colorado  
9:00 a.m.

I. Approval of Minutes (December 1, 2000)

II. Reports

- A. Chair's Report – Nagel
- B. Commissioners' Reports
- C. Advisory Committee Reports
- D. Public Comment

III. Consent Items

A. New Degree Proposals:

- (1) Proposal to Offer a Master of Science in Engineering and Technology Management at the Colorado School of Mines – Kuepper
- (2) Proposal to Offer a Master of Engineering (M.E.) at Colorado State University – Kuepper
- (3) Proposal to Offer a Bachelor of Arts in Interdisciplinary Studies at Fort Lewis College – Kuepper
- (4) Proposal to Offer a Bachelor of Arts in Interdisciplinary Studies/Liberal Arts at Adams State College – Samson/Linder
- (5) Proposal to Offer a Bachelor of Applied Technology (BAT) and a Bachelor of Applied Science (BAS) at the University of Northern Colorado – Kuepper/Evans
- (6) Proposal for B.S. in Computer Information Systems at Mesa State College – Samson

B. Approval Policy for Site-Based, Out-of-State and Out-of-Country Degree Programs – Breckel

IV. Action Items

A. CSOBA Loans to Colorado Institutions of Higher Education – DeMuth (10 minutes)

V. Items for Discussion and Possible Action

- A. Proposed Motions Regarding Distance Education – Richardson (15 minutes)
- B. Urban Land Institute Review of Fitzsimons/University of Colorado Hospital Project, Capital Construction Decisions – Adkins (10 minutes)

VI. Written Reports for Possible Discussion

A. Concept Papers:

- (1) Master of Science (M.S.) in Dental Science at the University of Colorado Health Sciences Center – Breckel

B. Degree Program Name Changes: Colorado School of Mines and University of Northern Colorado – Samson

C. CCHE-Capital Assets Quarterly/Annual Report – Adkins

D. Report on Out-of-State Instruction – Breckel

## **COLORADO COMMISSION ON HIGHER EDUCATION**

December 1, 2000  
Colorado Commission on Higher Education  
Denver, Colorado

### **MINUTES**

#### Commissioners

Present: Raymond T. Baker; Terrance L. Farina; Marion S. Gottesfeld; David E. Greenberg; Robert A. Hessler; Peggy Lamm; Ralph J. Nagel, Chair; Dean L. Quamme; James M. Stewart; and William B. Vollbracht.

#### Advisory Committee

Present: Senator Ken Arnold; Senator James Dyer; Representative Keith King; Wayne Artis; Calvin Frazier; and Sandy Hume.

#### Commission Staff

Present: Timothy E. Foster, Executive Director; JoAnn Evans; Sharon Samson; and Kathy Williams

- I. The meeting was called to order at 1:00 p.m. in conference room B at the Colorado Commission on Higher Education Office in Denver, Colorado.

Chair Nagel outlined the meeting format by stating that the Commission will not address all of the recommendations contained in the NORED Governance Report. The Commission accepted public testimony only on items brought up as a motion at this meeting.

## II. Consent Items

### A. Amendment to Colorado School of Mines Green Center Basement Renovation Program Plan

Colorado School of Mines submitted the program plan amendment on October 24, 2000, in response to CCHE concerns regarding the high square footage costs of the initial proposal and an Accreditation Board for Engineering and Technology (ABET) team's conclusion that inadequate physical facilities will lead to less than full accreditation for the baccalaureate degree offered by the Department of Geophysics. Construction costs for the renovation of the entire 20,000 square feet will cost approximately \$1 million beyond the originally requested amount. The total cost of the amended program plan will come to \$6,398,740. This reduces the square foot construction cost from approximately \$270/square foot to \$198/square foot.

#### **Staff Recommendation:**

That the Commission approve the program plan amendment to the Colorado School of Mines Green Center Basement Renovation, recognizing that the additional cost of about \$1 million will create a more flexible, multi-disciplinary space at a lower square footage cost than the previous program plan.

**Action:** Commissioner Nagel moved to approve the staff recommendation of Consent Item II A. Commissioner Farina seconded the motion and the motion carried unanimously.

### B. Community College of Aurora Technology Program Plan Revised

Consent Item II B may be taken up at a later meeting.

## III. Higher Education Governance in Colorado NORED Report

On November 2, 2000, the Commission accepted the Higher Education Governance in Colorado at the Dawn of the 21<sup>st</sup> Century, a report on higher education governance in Colorado conducted by Northwest Education Research Center (NORED) from Olympia, Washington. This agenda item provided an opportunity for the Commission to begin the process of responding to recommendations made in the NORED Report.

A. The first item the Commission discussed was recommendation 3.J. *"Reliable cost information is essential if policy makers are to accurately evaluate alternative arrangements and options. The CCHE has recommended implementation of a common system of data collection. This recommendation is reinforced here. It was impossible to determine the costs associated with the present governance arrangement with precision or dependable accuracy from the data collected as part of the present study. Until basic shortcomings in data and information systems are addressed and improved, neither policy makers nor the public will be able to count on the presence of accurate and accessible data to assist in policy*

*deliberations. As a prelude to the development of a common system of data collection, and to determine both the optimal level of reporting detail and the comparative costs of various higher education activities and functions, a comprehensive cost and expenditures study of Colorado higher education should be conducted."*

**Action:** Commissioner Vollbracht made a motion to establish a subcommittee of Commissioners and representatives of higher education community to develop standard data collection methods of measuring institutional cost information. Commissioner Hessler seconded the motion. Commissioner Gottesfield assured the institutions that the Commission is not trying to burden them with more information rather to replace what they are doing. The motion carried unanimously.

- B. The second issue the Commission addressed from the NORED report was recommendation 2. M. *"Through its RHEP initiative, the CCHE is exploring ways to use the existing community college network for the delivery of baccalaureate and some graduate programs by four-year institutions throughout Colorado. The CCHE also should consider the need for authority for certain regional community colleges to offer a limited number of upper-division programs suited to their institutional resources in cases of sustained need when other solutions are likely to prove impractical or unworkable. The emphasis should be on programs that combine lower division technical specializations with a liberal arts component drawn from the institution's academic transfer curriculum. Any authority for indigenous upper-division programs should not be allowed to diminish the institutions' comprehensive community college obligations, and all such programs should be approved by the State Board for Community and Occupational Education and the CCHE. These institutions should not be re-designated as baccalaureate institutions."*

Currently Colorado is initiating the REAP program. Community Colleges and CU, state colleges support the motion. Representatives of the Community College System, the University of Colorado system and the State Colleges support the motion.

**Action:** Commissioner Hessler moved that the Commission and the higher education community explore ways to use existing community college network for the deliver of baccalaureate programs by four-year programs (Recommendation 2M) utilizing the REAP Program. Commissioner Lamm seconded the motion and the motion carried unanimously. The subcommittee will be made up of Commissioners as well as representatives of the higher education community.

- C. The third item the Commission discussed was recommendation 2 A *"The CCHE should review institutional role and mission statements for their adequacy and relevance to changing conditions of Colorado. Particular attention should be directed to determining the continued efficacy of mission distinctions based on stratified admissions categories and their effects on the capabilities of regional higher education providers to meet a broad range of needs in different areas of Colorado. The Commission should involve the boards and institutions in this*

*mission review process. The goal should be a definition of distinctive roles and missions for each institution that can be used both to expand service and in the development of the Colorado Compacts."*

Commissioner Nagel stated that recommendation (2A) is a very large topic and the Commission does not know where it will end up because it will require much discussion. He recommended that the Commission's consideration focus on two or three issues of the recommendation. First, there must be eligibility requirements established before an institution can take the step to initiate a compact college because this is a serious change in accountability. Second, there should be clear guidelines/areas where the Commission can expect specific new agreements to be written so that citizens, students, and institutions know the issues in advance. Third, although the NORED report recommended starting with six compact colleges, it is the consensus that six is too a large step for the state to take at this time.

Chair Nagel suggested that Colorado start with at least one and no more than three institutions for the pilot of compact colleges and focus on governing boards with a single institution. Perhaps it may be easier for those governing boards with a single institution to respond. The Commission is willing to state to the court that this is a good opportunity for great dialogue with the legislature and institutions.

Ed Bowditch, Vice Chancellor of Administrative Affairs for the Colorado State University System asked for clarification of the advantages to the institutions that become compact colleges.

Elizabeth Hoffman, President of the University of Colorado, echoed Mr. Bowditch's statement. She also supports the framing of the motion.

Christine Johnson, Vice President of Educational Support Services at the Community Colleges of Colorado, supports the prudent approach especially since we don't know the cost impact.

George Walker suggested that the Commission address ethnic minority numeric goals in developing compact colleges.

Aaron Houston, representative of the Colorado Student Association (CSA), reported that CSA supports the Commission approaching the issue of compact colleges in a limited way.

Dale Mingleton, Trustee of the State Colleges, supports the Commission's recommendation and asked that the higher education governing board systems be included in the decision making.

Representative Keith King reported that a bill title on this issue has already been proposed and will be sponsored by Senator Anderson and himself. He invited the Commission to give input immediately on the bill.

The Commission agreed to initiate the compact college recommendation by starting on a smaller scale with two and not more than three institutions. Governing boards may suggest institutions for consideration to Executive Director Foster. Commissioner Gottesfeld volunteered to serve on the subcommittee study group that will draft a recommendation on charter/compact colleges.

**Action:** Commissioner Nagel made a motion that Colorado begin the compact college project with at least one but no more than three institutions and focus on governing boards with a single institution. Commissioner Gottesfeld seconded the motion and the motion carried.

- D. Recommendation 2E "*Metropolitan State College of Denver should be governed by an independent governing board and strive to meet those baccalaureate program needs of residents of the metropolitan area not otherwise covered by the graduate and professional programs unique to CU-Denver at Auraria. It should continue its open door tradition but it should be designated Metropolitan State University of Denver.*"

Dale Mingleton, Trustee of the State Colleges, reported that all four presidents of the state colleges agreed that Metropolitan State College should remain part of the state college system. He responded to concerns raised in response to the NORED recommendation:

- Diversity: Metro State student population is diverse, however, Adams State College's population is just as diverse.
- Traditional/non-traditional students. 44 percent of students at Metro State are over 25 years old. Although at Western State that figure is only 12 percent, Adams and Mesa are at 33 and 34 percent respectively, which makes the similar to Metro. The argument that the schools are different is not strong enough to pull Metro out the State College System.
- The other institutions in the system have some advantages by having Metro State in the system and Metro benefits by being part of the system. Other schools offer graduate programs to which students from Metro can transfer.
- The blend of the four state college presidents offer different viewpoints as a system to cover what's best for citizens of Colorado.
- The four institutions are not research institutions, but rather are teaching institutions. Perhaps there are other teaching institutions that would fit within the State College System.
- Fund is a major issue for all the state colleges.

Mr. Mingleton believes that now it is not in the best interest of students or citizens to dismantle the system. On the other hand, the Trustees of the State Colleges does not want to hold Metro State back. Right now Metro is thriving and is not hindered by being part of the system. The four schools create a synergy that is helpful to Colorado. The Trustees are willing to look at MSCD as a compact system.

Stephanie Vassilaros, President of Metropolitan State College of Denver Student Government, reported that Metro students emphatically support the recommendation for a separate governing board for MSCD. Metro is different because it is the only school in the state college system that doesn't provide student housing. Metro serves nontraditional students who not only do not live on campus, may have families and live in the metropolitan area. She stated that MSCD subsidizes other the state colleges since MSCD students pay higher tuition and that money could be better used on Metro campus. She believes that Metro State faculty is underpaid.

Lee Halgren, Interim President of The State Colleges, clarified the funding patterns for the state colleges. In 1986 funding allocations went directly to governing boards so they could begin to make allocation as they saw fit. In 1985, when legislature moved from direct funding to governing board funding, within the state system, Metro was below average by 4.6 percent. In 1995 their status had improved to 3.83 percent. At that time, the Trustees implemented a new budget allocation methodology to reduce disparity between the institutions. This current year Metro has improved to 3.81 percent below the system average. He added that all governing board systems experience disparity in funding.

Chair Nagel recommended that an adjustment be made to assure institutional funding is held harmless so that the Commission can focus on the governing part of the equation.

Commissioner Quamme is nervous about taking this item by itself, whether or not Metro should come out of the system, because of the impact it has on the other institutions within the system. Until there is a thorough understanding about how the other institutions will be operated, governed, etc. and what the financial impact will be, he is not convinced there needs to be changes in the system.

Commissioner Hessler also is uncomfortable with changing the system until there is further study into how the other institutions fit in the overall governance and it is determined what will best serve the students of Colorado. Commissioner Greenberg suggested there be a collaborative process to get legitimate alternatives. Commissioner Baker said that he is also opposed to the recommendation and supports additional study of the concept issues.

Representative King reported that he and Senator Anderson are drafting legislation regarding the compact college, however, could not discuss the details of the draft.

Senator Dyer also reported that he has entered a bill recommending that Ft. Lewis College have an independent board. The bigger picture would be concerning governance of higher education in Colorado which would be a huge bill.

Commissioner Farina, stated that although funding was separated from the recommendation discussion, it might be difficult to guarantee different levels of funding. The discussion will probably continue, and it may be a radical thing to

do without thinking of the implications on other three institutions. The number one recommendation emphasized in the NORED report was the compact colleges and he suggested the discussion focus on how to improve the higher education system.

Commissioner Lamm would like to know to what extent being associated with the state colleges is holding Metro back. Would the institution be able to grow further and have more tenured and better-paid faculty if it were under an independent governing board? Trustee Mingleton responded that none of the institutions are being held back and funds are going to all institutions. However, all faculty in Colorado are underpaid. Metro faculty salaries are higher than rural salaries. However, the college presidents are given the opportunity to reward some professors and instructors as they wish.

Commissioner Greenberg stated that MSCS after CSM is the most unique institution in the state. The trustees do an excellent job, but they have to balance the metropolitan with rural institutions. The rural schools are much more traditional than Metro and there are competing interests. A standard management consultant would suggest a spin-off of one and integrate the other three with other systems.

Commissioner Vollbracht did not want to vote on the recommendation at this time and would amend the recommendation to form a group to develop a suggestion to come back to the Commission next month. Commissioner Baker agrees that it does merit further dialogue along with the housing component which is an issue.

Executive Director Foster suggested that the Commission express general interest in Metropolitan State College having a separate board. A subcommittee should be established to develop a satisfactory solution to what happens to the other three institutions, and as part of that conversation, CCHE will adjust the funding formula so that the \$4.5 million remain as allocated by the Trustees of the State Colleges.

**Action:** Commissioner Greenberg made a motion to approve recommendation 2E, as stated above, with the exception that the name of the institution remains Metropolitan State College of Denver. Commissioner Lamm seconded the motion.

Based on the discussion at this meeting Commissioner Greenberg withdrew his motion with the condition that the Commission substitute a date certain that the subcommittee will have a set of options to present to the Commission. Commissioner Lamm withdrew her second to the motion. Senator Arnold suggested a February due date for the subcommittee's recommendation to the Commission.

**Action:** Commissioner Greenberg moved that an exploratory advisory subcommittee be established made up of representatives (trustees) of the three governing boards (State Colleges of Colorado, University of Northern Colorado and Colorado State University),

their chief executive officers and representative of the CCHE staff be established to develop recommendations regarding the governance of Metropolitan State College of Denver and the impact on the governance of other institutions. The subcommittee will report to the Commission at its February meeting. Commissioner Farina seconded the motion and the motion carried unanimously.

- E. Recommendation 3 H, *Colorado should consider a common course numbering system for use in its public institutions of higher learning. The independent institutions should be invited to participate on a voluntary basis. There are models in place in other states that may be emulated to reduce the level of effort involved in the creation of such a system. The presence of such a common nomenclature could contribute greatly to the elimination of many of the problems associated with credit transfer in Colorado.*

Elizabeth Hoffman, President of the University of Colorado, suggested Colorado use a system of numbers for campuses to articulate courses into, similar to the Illinois system, and use the already existing articulation agreements. The community colleges and CU are already working on it.

Lee Halgren stated that the State Colleges are supportive of the common numbering and would like to join in the work being done.

Aaron Houston, President of the Colorado Student Association (CSA), expressed support for common course numbering.

Wayne Artis, representing the faculty, said supports the clearinghouse system rather than the Florida model.

Sharon Samson, CCHE staff, supports the simplest approach and said this may uncover some general education questions. It may open up broader issues. If there is a committee that is already formed, CCHE be happy to work on it.

Representative Keith King said that he would introduce legislation on this issue. He said there are several state models and National Council of State Legislatures is conducting the research.

There was discussion about whether legislation was required to make all institutions participate and it was the consensus that legislation may move the process along quicker.

**Action:** Commissioner Lamm made a motion to approve a common course numbering system in order to ease transfer as recommended in NORED Report recommendation 3 H. Commissioner Stewart seconded. The motion carried with nine in favor and one (Commissioner Baker) opposed.

- F. Recommendation 2 F, *Ft. Lewis College should be governed by an independent governing board and assigned clarified mission responsibilities as a regional higher education provider. It should continue to emphasize services to Durango*

*and southwestern Colorado, its Native American program specialization, and its cooperation with Pueblo Community College in the provision of comprehensive higher education services in the Southwestern region of the state.*

Senator Jim Dyer asked the motion to approve the recommendation 2F be amended to end of the second sentence at Durango and drop the rest of the language. He reported that there is a great deal of local community discussion. There is not unanimous support in the community and the college. Ft. Lewis faculty are not totally in favor. Senator Dyer is planning to introduce legislation to help generate discussion. Commissioner Quamme supports getting community input.

Commissioner Vollbracht asked if the discussion of governance of Ft. Lewis College fit within the discussion on the state college subcommittee.

Ed Bowditch, representative of the State Board of Agriculture, said the critical issue is whether or not Ft. Lewis remains a statewide liberal arts college or a regional higher education provider. He appreciated Senator Dyer's recommendation for it to remain a regional higher education provider. The position of the State Board of Agriculture was outlined in the NORED response and would be happy to have further dialogue with the Commission.

**Action:** Commissioner Hessler moved to approve recommendation 2F regarding Fort Lewis College's independent governing board. Commissioner Lamm seconded the motion.

Commissioner Farina moved to amend the motion to approve recommendation 2F to include a period after the word "responsibilities" in the first sentence. In addition, it will be put on the same time line as the state colleges (report at the February Commission meeting). Commissioner Quamme seconded the amendment. The amendment passed unanimously.

Commissioner Nagel clarified that not all things will relate to items that the Commission should have a stake in and some may be better handled in other arenas, through institutions, and through the legislature. There are a few items that may be called back later.

**Action:** Commissioner Baker moved to adjourn the meeting. Commissioner Greenberg seconded the motion and the meeting adjourned at 2:46 p.m.

Colorado Commission on Higher Education (CCHE)  
January 9, 2001  
Agenda Item II, A

**TOPIC: CHAIR'S REPORTS**

**PREPARED BY: RALPH NAGEL**

This item will be a regular monthly discussion of items which the Chair feels will be of interest to the Commission.

Colorado Commission on Higher Education (CCHE)  
January 9, 2001  
Agenda Item II, B

**TOPIC: COMMISSIONERS' REPORT**

**PREPARED BY: COMMISSIONERS**

This item provides an opportunity for Commissioners to report on their activities of the past month.

Colorado Commission on Higher Education (CCHE)  
January 9, 2001  
Agenda Item II, C

**TOPIC:                   ADVISORY COMMITTEE REPORTS**

**PREPARED BY:       ADVISORY COMMITTEE MEMBERS**

This item provides an opportunity for Commission Advisory Committee members to report on items of interest to the Commission.

Colorado Commission on Higher Education (CCHE)  
January 9, 2001  
Agenda Item II, D

**TOPIC: PUBLIC COMMENT**

**PREPARED BY: TIM FOSTER**

This item provides an opportunity for public comment on any item unrelated to the meeting agenda. A sign-up sheet is provided on the day of the meeting for all persons wishing to address the Commission on issues not on the agenda. Speakers are called in the order in which they sign up. Each participant begins by stating his/her name, address and organization. Participants are asked to keep their comments brief and not repeat what others have said.

**TOPIC:                    PROPOSAL TO OFFER A MASTER OF SCIENCE IN ENGINEERING  
AND TECHNOLOGY MANAGEMENT AT THE COLORADO  
SCHOOL OF MINES**

**PREPARED BY:        WILLIAM G. KUEPPER**

**I.        SUMMARY**

The Trustees of the Colorado School of Mines (CSM) request Commission approval of a Master of Science (M.S.) in Engineering and Technology Management at that institution. The degree, which will be housed in the Division of Economics and Business, is designed to “effectively integrate engineering and management perspectives in a technically complex business environment.”

The program will include both a thesis and non-thesis option with each requiring 36 credits. In addition, the program will include a joint B.S./M.S. track allowing undergraduate students in selected fields to complete a five-year program leading to both a baccalaureate degree and an M.S. in Engineering and Technology Management. The school would accept its first students into the program in fall 2001 with an initial enrollment projected at 20, increasing to 50 over five years. At full implementation, the program expects to produce forty-seven graduates per year.

The proposed program builds on CSM’s strengths in quantitative business methods and systems research and is intended to support the institution’s mission in engineering education. Commission staff believes the program offers a valuable alternative to the MBA for engineers wishing to have more focused training in the management of technically complex business and industry, and views the five-year B.S./M.S. program option as responsive to the Commission’s interest in the timely completion of a course of study and in efficient degree programs. In the judgement of Commission staff, issues raised at the concept paper stage and by the external reviewer have been adequately addressed.

The staff recommends approving the request for a Master of Science in Engineering and Technology Management at the Colorado School of Mines.

**II.        BACKGROUND**

The concept paper for the proposed degree program was on the Commission agenda at its meeting of August 9, 2000. Seven issues were raised by the Commission and these are specifically addressed by the institution (see Attachment A). Professor Ray Kluczny of the Engineering Management Department at the University of Missouri-Rolla, a peer institution

of the Colorado School of Mines, served as the external reviewer of the proposal. His report is appended as Attachment B and the CSM's response, contained in a letter to the Trustees, is Attachment C. The Trustees approved the proposal at its meeting of November 2000

Engineering management focuses on managing existing assets and projects, while technology management focuses on broader, more strategic issues associated with technology development and commercialization. The similarities in the two fields represented in the degree program permit a core of courses appropriate to both. The differences are sufficient to warrant the two components in the degree title and to have specializations in the program appropriate to each. Students interested in "more of the traditional engineering management principles" can select the specialization in Quantitative Decision Methods with its emphasis on operations research and optimization, project management, and decision analysis. Students pursuing technology management can select the Strategy and Organization specialization emphasizing the management of "technology issues in the modern business enterprise."

The proposed degree has three overarching goals:

- 1) To provide strong graduate education to engineers and applied scientists in the areas of engineering management and the management of technology, with a particular emphasis on the analytical and scientific aspects of those disciplines.
- 2) To provide students with a graduate program of study that effectively integrates the engineering and management perspectives in a technologically complex business environment.
- 3) To provide an educational experience that prepares our students for leadership roles in the fields of engineering, applied science, and technology.

The program will have a thesis and a non-thesis option each requiring 36 credits. A core of 18 credits taken by all students in the program provides "fundamental principles of engineering and technology management." A description of the core courses is appended as Attachment D. Students completing a thesis take six additional hours in one of the two areas of specialization and 12 hours of thesis credit. The non-thesis students will select nine additional hours in a specialization and nine hours of electives from engineering and applied science disciplines. The program is described as having a "strong emphasis on the quantitative and analytical aspects" of the field. It is designed to be "application-intensive, with a special focus on identifying technology-related problems (and) developing practical solutions based on the principles of engineering and technology management."

The curriculum will utilize existing graduate courses in quantitative business methods and operations research as well as introducing several new courses. The latter group of courses will include *Project Management*, *Technology Policy*, and *Management of Technology*.

The program will provide an accelerated option for CSM students wishing to earn both an undergraduate degree in engineering or applied science and the M.S. in Engineering and Technology Management. Such students would be permitted to count nine credits of their upper divisional work toward meeting the M.S. requirements and be permitted to enroll in graduate-level work during their senior year. That combination would allow them to complete the two degrees in a total of five years.

To be admitted to the program, a student must either hold an undergraduate degree in engineering or applied science from an accredited institution, or be a junior enrolled in an engineering or applied science undergraduate program at CSM and have a grade point average of 3.2 or better. All non-CSM applicants must have taken either the Graduate Record Exam or Graduate Management Admissions Test, demonstrate writing proficiency, and have taken courses in engineering economics and statistics.

### **III. STAFF ANALYSIS**

In analyzing the concept paper and program proposal, the staff considered role and mission, duplication, program need and demand, and quality issues such as curriculum and resources. Both the concept paper and full proposal were submitted to the other governing boards for peer review.

#### **Role and Mission and Program Duplication**

The proposed program appears to be within with the statutory role and mission of the Colorado School of Mines and is viewed by the institution as supporting its broad mission of supplying complete graduate education. It is also designed to be consistent with *Guiding Values and Principles for CSM Graduate Programs*, by ensuring that graduates are “able to function effectively in an information-based economy and society (and) are prepared for leadership in a team-based milieu...”

Three other institutions in the state offer graduate work in engineering and technology management but this program is not duplicated elsewhere in Colorado. CSM faculty have had discussions with colleagues at Colorado State University and at UC-Boulder in order to clarify the distinctions between the proposed program and existing offerings. Commission staff do not see program duplication as an issue.

#### **Program Need and Demand**

The proposal emphasizes the need for technically trained managers for the increasingly complex, high-technology organizations. Employment opportunities have been very good for those trained in this field. Average salaries for those holding undergraduate degree in

ETM are comparable to those in other fields of engineering (\$45,000). Colorado's commitment to the further development of technology-based business and industry should provide substantial opportunities for graduates of the proposed program.

In a survey of CSM undergraduates in engineering and applied science, 61% of respondents stated they would either enroll in the five-year program as undergraduates, or would be likely to enter the M.S. program at a later date.

In addition, the external reviewer noted the success of such programs in attracting students.

UM-Rolla has an on-campus and an off-campus engineering management program. On-campus enrollments over the past five years have averaged 77 students and the off-campus program, located at nearby Fort Leonard Wood, graduates 80 students per year. In 1999, the top 57 engineering management programs in the nation produced almost 2,000 graduates.

Commission staff believe that student interest nationally in such programs, as well as the interest shown in this particular program by CSM students, justifies the initial enrollment projection of 20 students (Attachment E). A steady enrollment growth is expected, reaching 50 students at full program implementation in five years. Graduation rates are expected to be high, with the program projected to produce 19 graduates at the end of the first year and 47 per year at full implementation.

### **Program Quality and Resources**

CCHE staff rely substantially on active governing board involvement in assessing the quality of a proposed program, the capacity of the institution to offer the degree, and cost-effectiveness of offering the program. The Trustees of the Colorado School of Mines have considered these matters and concluded that the proposed program has the appropriate quality and cost-effectiveness, and that the institution has the capacity to offer it (see Attachment F).

The external reviewer noted that the proposed program has content appropriate to the field and a structure that provides flexibility for the students. He also noted that the program, with its quantitative and analytical orientation, is designed to take advantage of the particular strengths of the institution, e.g., in operations research. The reviewer suggested that it would be helpful to know if the program would meet the standards of an accrediting body or, if not, would "exist in an academic environment of accredited programs." In its response, CSM noted that all of its undergraduate engineering programs are accredited by the Accrediting Board for Engineering and Technology (ABET).

The Division of Economics and Business has sufficient faculty resources to initiate the program. One new faculty member will be required in the "early phases" of the program and two additional faculty would be needed by the fifth year if the program grows as forecast in the enrollment projections.

These faculty positions are included in the budget and covered by additional revenue from projected enrollment increases (Attachment G). The overall budget for the program appears to be realistic. One modification made in response to a concern of the external reviewer will be a doubling of the funds for computing.

The institution has certified that the proposed M.S. in Engineering and Technology Management program can be fully implemented and accommodate the enrollment projections provided in this proposal without requiring additional space or renovating existing space during the first five years

**IV. STAFF RECOMMENDATION**

**That the Commission approve the request of the Trustees of the Colorado School of Mines for a Master of Science in Engineering and Technology Management.**

**Attachment A**

**RESPONSES TO THE CCHE COMMENTS ON THE ETM PROGRAM PROPOSAL  
CONCEPT PAPER**

*1. Provide a clear distinction between engineering and technology management, and how the differences are reflected in the curriculum.*

Engineering management focuses on managing existing assets and projects. It looks primarily at planning, organizing, allocating resources, and directing and controlling activities that have an engineering component. Engineering managers are distinguished from other managers in that they possess both an ability to apply engineering principles and a skill in organizing and directing technical projects and people in technical jobs. Technology management, in contrast, focuses on the broader, more strategic issues associated with technology development and commercialization. Technology management is a relatively new area that involves integration of a wide range of areas, such strategy, marketing, economics, organizational learning, and management of innovation.

With regard to the curriculum, all students would be delivered foundational principles in our core courses that would apply to both engineering management and technology management. In addition, the curriculum is designed in a way such that students interested in more of the traditional engineering management principles might select our Quantitative Decision Methods specialization, which offers traditional courses in operations research and optimization methods, project management, and decision analysis. Students more inclined to pursue a specialization in technology management might select the Strategy and Organization specialization which is designed to focus more on the management of technology issues in the modern business enterprise. The Engineering and Technology Management capstone core course is designed to meet the needs of all students interested in either engineering or technology management. This course is designed to integrate important components of both these disciplines – all with a strongly applied focus.

*2. Why the proposed degree program would be a M.S. rather than a Master of Engineering (M.E.) even though it is designed as a course-only degree program.*

We are proposing a Master of Science degree because of the highly quantitative and analytical approach we intend to take in the delivery of the curriculum content. Though we will provide the basic qualitative elements necessary from a foundational perspective, our intent is to focus on the quantitative and analytical elements of graduate engineering and technology management education. In addition, students have an ability to select the thesis option that would contain a research component consistent with most Master of Science programs. Master of Engineering degrees, on the other hand, typically have a strong engineering component as part of the curriculum content. In contrast, the Engineering and Technology Management Program is designed to integrate the technical elements of engineering practice with the managerial elements of modern engineering and technology management – with a major focus on the business and management principles related to this integration.

*3. The characteristics of the proposed program which would distinguish it from, and make it complementary to, existing programs in engineering management in Colorado.*

The proposed ETM program has a number of characteristics that clearly distinguish it from other programs in the state. The first of these is the student population that we intend to service. Our major focus is undergraduate students at CSM who desire to strengthen their engineering and technology management skill set before launching their careers in industry or government. Both the Colorado State University (CSU) and the University of Colorado at Boulder have working professionals as their intended students in their respective programs. This is also true for the joint degree program at the University of Denver.

The second distinction is that the CSM program is designed to be a complete in-residence graduate program. At this point we have no plans to integrate a distance-learning component. In contrast, only 10-15% of the students in the CU-Boulder engineering management program are in-residence. The major portion of the CU degree program is delivered through different distance learning mechanisms. The CSU program also has a distance-learning component as part of that program.

The third distinction is the emphasis on both engineering and technology management. Unlike the CU-Boulder, CSU, and DU programs where the degree conferred is an engineering management degree, the CSM program is designed to place special emphasis on the management of technology and how that discipline integrates with the traditional engineering management discipline. In contrast to other programs in the state, the ETM Program is designed to focus on the integration of the technical elements of engineering practice with the managerial elements of modern engineering and technology management. The ETM program is designed to provide special focus on the quantitative and analytical aspects of business and management principles related to this integration.

The proposed ETM program complements other programs in the state by offering a unique graduate engineering and technology management education. While existing programs primarily focus on working professionals, our program focuses mainly on the newly minted undergraduates. While existing programs provide emphasis on a distance-learning educational format, the CSM program is designed to be an in-residence program. Lastly, our educational philosophy and resulting curriculum places a special emphasis on the integration of engineering and technology management. Our discussions with, and reactions from, representatives at CU and CSU suggest that there can be a strong degree of complementarity among our programs.

*4. Why new graduates in engineering and applied science will be admitted to, and can benefit from, the program.*

As we discuss in our proposal we believe there is a strong need for engineering and technology management skills for new graduates in engineering and applied science. The changing nature of most organizations has dramatically increased the need for business and managerial skills applicable to technological environments – even for newly minted engineers and applied scientists. Traditionally, graduate management education has been targeted at those individuals who have previous work experience. We feel strongly that because of the changing nature of business organizations, the foundations of engineering and technology management are of great value to those

just entering the work force. Work processes and workflows have changed significantly in technologically intensive business environments. In addition, the proliferation of change with regard to organizational decision-making and asset management (such as the emphasis on cross-disciplinary teams) makes a more comprehensive engineering education essential. In organizations that are exposed to rapid technology changes, skills in designing, operating, and continuously improving systems by integrating engineering and management will be highly valued. Students with high leadership potential who can achieve high quality results can significantly expand their potential by participating in our proposed ETM Program.

*5. Who the clientele for the program will be, and evidence to support the enrollment projections of 20 students at initiation and 50 at full implementation.*

Students attracted to this program will be engineers and applied scientists desiring management education in a technical environment. They will seek education in management to complement their technical skills. We expect to attract three types of students: (1) CSM undergraduate students in engineering and applied science interested in a dual B.S./M.S. degree program, (2) recent engineering and applied-science graduates from other universities, and (3) professional engineers and applied scientists in mid-career (5-12 years post-B.S. degree). Our initial and primary target is the first type of student—existing CSM undergraduate engineering and applied-science students.

As described below, our enrollment projections are based on: (1) a survey of CSM undergraduate students, and (2) information from similar programs elsewhere in the United States.

In July 2000, we surveyed existing CSM sophomores and juniors. The survey itself is contained in Appendix D-1 of this document. Of the 1113 surveys mailed, we received 184 responses for a response rate of 16.5%. The survey results are shown in Appendix D-2. The important results with regard to sources of students relate to questions #7, #9 and #10. Eighty-five percent of the respondents would consider the CSM proposed ETM program a more viable alternative than a traditional MBA program. This result suggests that students in engineering and applied science seek a more-specialized management degree—one that focuses on integrating engineering and applied science with the principles of engineering and technology management. Of the 184 responses received, 31% indicate a very high likelihood that they would enroll in the ETM program as a dual B.S./M.S. endeavor. This result suggests that among the respondents alone there are 40-50 potential students for the ETM program. Finally, over 31% of the respondents indicated that even if they did not enroll in the ETM Program during their current tenure at CSM, they would be highly likely to enroll in the graduate program at a later date.

Thus we anticipate that our primary source of students in the ETM Program will be CSM students. Our strategy to develop a combined B.S./M.S. program where undergraduates in engineering and applied science disciplines can “fast-track” to the M.S. Program in Engineering and Technology Management will make the proposed program attractive to existing CSM students. As the program develops and evolves we anticipate that the number of students from the other two sources (recent

engineering graduates from other universities and professional engineers in mid-career) will also increase.

The second basis for our enrollment projections is information from the following peer institutions or programs: The Pennsylvania State University (program in Quality and Manufacturing Management), Stanford University (Industrial Engineering and Engineering Management), University of Missouri at Rolla (Engineering Management), and Rensselaer Polytechnic Institute (two programs—Engineering Management, and their 5-year BS/MBA program). Student populations in these programs range from 30 to 70 full-time students per year, with most averaging 45 students.

Thus we are comfortable with our enrollment projections of 20 students initially, growing to a steady state of 50 by the fifth year.

*6. Further discussion of faculty resources available for the program, including the expansion of the statement in the concept paper that “near-critical mass of faculty resources” [is available] to begin the program.*

The Division of Economics and Business currently has significant faculty skills and resources to initiate the proposed ETM Program. Faculty resumes have been attached to the proposal to provide an overview of those resources. Particular emphasis should be placed on a number of those existing faculty. Shekhar Jayanthi and Alexandra Newman both have strong emphases in the areas of management of technology, manufacturing management, product and process optimization, and operations research. Robert Woolsey is a world-renowned expert in the area of operations research and has won numerous teaching awards, both internally and externally to CSM, in the area of optimization and operations research. Michael Walls brings expertise in both quantitative decision methods and modern finance concepts, as well as advisory experience with a number of technology companies. In addition, the Division has excellent resources in the areas of finance, economics, asset valuation, and accounting – all valuable components in our proposed ETM program.

*7. How the proposed program will meet the identifiable needs of the modern, technologically oriented market place.*

As we indicate in our proposal, with increasing competition, globalization, and rapid changes in technologies, modern high-technology organizations are becoming increasingly complex. This trend is likely to continue in the manufacturing, service, private, and public sectors. The management of organizations in these sectors requires responsiveness through the design, development, and implementation of new products and process technologies. Our proposed program intends to train our graduates to be leaders in this new economy by (1) aggressively integrating both business and engineering perspectives; and (2) enabling our graduates to apply state-of-the-art quantitative and scientific models that can bring value to engineering and technology management issues and problems.

**Attachment B**

**Review of Proposal for A Master of Science Degree In  
Engineering And Technology Management At The Colorado School Of Mines**

**Ray Kluczny, PhD  
Associate Professor of Engineering Management  
Engineering Management Department  
University of Missouri-Rolla  
1870 Miner Circle  
Rolla, MO 65409-0370  
573-341-4569**

I. Assess the quality of the proposed program.

A. Does the curriculum provide generally accepted content in Engineering and Technology Management? Is this field of study sufficiently defined to warrant the awarding of a degree?

The proposed program, in my opinion, does provide content appropriate to a Master's Degree in Engineering and Technology Management. The 18-hour core course sequence provides coverage of the fundamental areas in business management consistent with the strengths and orientation of the department, which I believe to be economics and quantitative decision making. The remaining 18 hours of coursework provide flexibility for students in requiring 9 hours from one of two specialization areas and allowing the other 9 hours as electives from approved technical courses on campus. The Quantitative Decision Methods Area of Specialization consists of well-established existing courses. Most of the courses in the other Area of Specialization, Strategy and Organization, would be developed for this program. The selection of courses for Strategy and Organization is excellent. Management of technology, entrepreneurship, and marketing are critical themes in technical management and e-business today. The 9 hours of technical electives tailor the degree to the culture of the campus and prospective students, and distinguish the degree from an MBA by providing for advanced technical coursework.

The field of Engineering Management is sufficiently defined to warrant a Master's Degree in Engineering and Technology Management. There are dozens of Engineering Management Master's Degree programs in existence. ABET specifically accredits programs in Engineering Management. Several professional societies are dedicated to Engineering Management. A number of national and international Engineering Management conferences occur annually.

II. How do the methods of instruction support and enhance program quality?

Even though my comments substantiating the degree are with respect to the general area of Engineering Management, I believe that this degree proposal has a definite emphasis within that general area. The orientation of this degree is quantitative and analytical. I know from my past membership in the ORSA/TIMS

Society (now INFORMS) that the department has a national reputation for its innovative experiential approach to teaching operations research. I believe this strength is represented in the design of the program. Furthermore, the program is planned for implementation as an in-residence graduate program. I would expect that the same intensive full-time experience of the existing program would be carried over to the new program. Finally, I am in favor of a thesis option for a Master's degree. The thesis affords the opportunity for in-depth study and can serve as the basis for doctoral level graduate studies. Overall, the methods of instruction are consistent with the educational philosophy expressed in the proposal.

Regarding program quality, I was not able to find any reference to accreditation of the proposed or existing programs. Although the outcome assessment measures identified in the proposal are meaningful, it would be helpful to know that the program is planned to meet the standards of an accrediting agency or that the program exists in an academic environment of accredited undergraduate degrees.

III. Assess the capacity of the institution to offer the proposed program.

A. Is the number of faculty and the academic preparation and experience of members of the faculty consistent with a high quality program? Do supporting programs have the necessary number of faculty and the academic preparation and experience of members of the faculty consistent with a high quality program?

I find the enrollment projections based on the surveys and institutional comparisons to be realistic. Though current course enrollments are not shown, I would expect that an initial inflow of approximately twenty new students would have a marginal impact on existing courses and departmental resources. However, I do have a concern that the core courses are not marked as to which courses if any are new courses. Very short lead times could be a problem for the development of new core courses. Faculty loadings would have to be considered and lower than expected enrollments could affect the ability to offer the new courses that are unique to this program.

The faculty appears well qualified to deliver the proposed program of study. The commitment for additional faculty is important in dealing with the projected growth of the program and in producing the new areas of study associated with the proposed new courses. I do not see a problem in the need for supporting programs.

B. Are the other resources necessary for a high quality program either currently available or assured (library material, computer equipment, and laboratories)?

I find the financial projections in the proposal to be realistic, except for a concern I have for the \$12,000 budgeted for computer equipment. First, twenty-plus additional graduate students in a quantitatively oriented program will have an impact on the number of workstations needed in the department. Second, additional costs may be expected for the planned e-commerce and supply chain courses for new software licenses. My own experience has been one of under estimating the costs associated with well-equipped laboratories and with teaching the new technologies.

C. Are the costs budgeted by the institution realistic for the delivery of the minimum hours of instruction required for the degree? Is the budget prepared by the institution a realistic assessment of the costs

of a high quality program?

Based on my experience in my university, I find the financial projections in the proposal to be realistic for the proposed program.

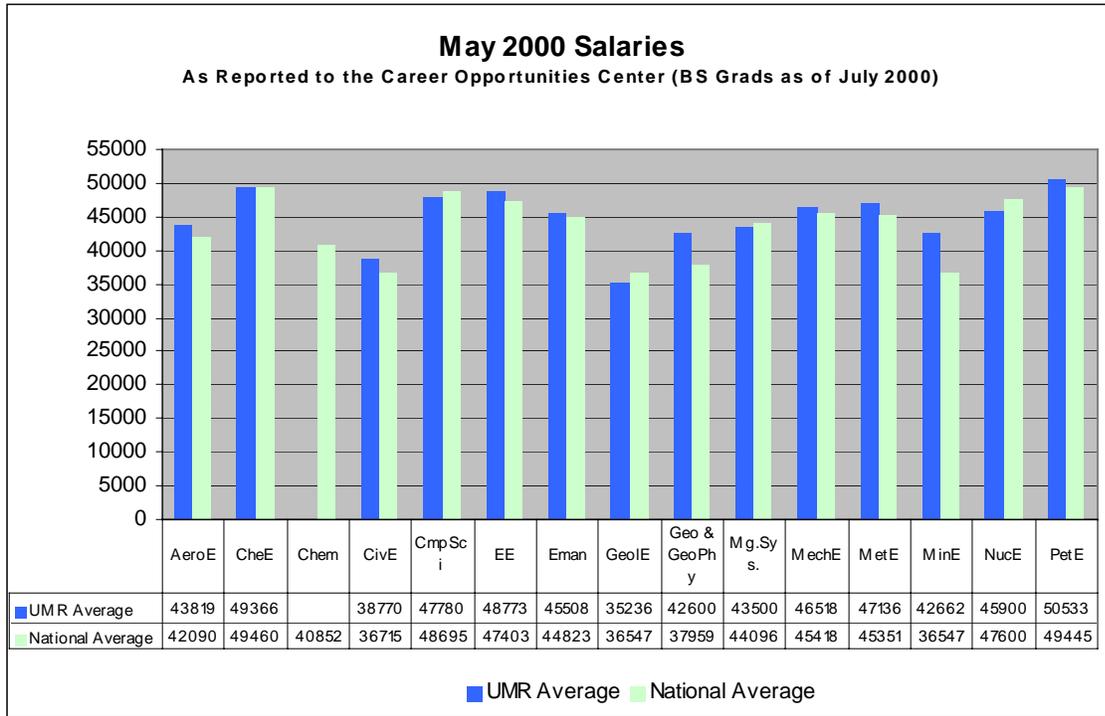
IV. Comment upon the level of interest and demand by students for a degree in the field.

At my institution we have experienced a very high level of interest by students for graduate study in Engineering Management. The average on-campus enrolment in our Engineering Management graduate program for the past five years at the University of Missouri-Rolla has been 77.2. Our off-campus graduate program at Fort Leonard Wood alone has graduated more than 80 students per year since its inception five years ago. Last year, we produced as many graduate students as all of the other engineering school programs combined.

V. Assess the demand and need for graduates in this field.

A. What is the employability of graduates, currently and in the future?

I do not have our graduate student placement data, but I do have the data for our undergraduates, which I believe is representative of the general demand for Engineering Management students. This figure shows that the Engineering Management (Eman) salaries are among the top salaries on campus.



B. What is the national degree production and need for graduates?

According to the publication “Engineering and Technology Degrees” by the Engineering Workforce Commission of the American Association of Engineering Societies, Inc. the top 57 Engineering Management graduate programs in 1999 produced a total of 1,998 graduates. My own department graduated 204 students in 1999. There is a strong demand for Engineering Management graduates.

VI. If possible, comment on the potential economic impact that could be expected to result from the establishment of this program in Colorado.

I am unable to assess the direct economic impact of this program in Colorado.

VII. No specific questions.

VII. Additional reviewer comments: How the program meets the identifiable needs of the modern, technologically-oriented market place.

In my opinion this program prepares graduates for effective performance as leaders in today’s complex economic environment. These men and women will see business as a complete technology-driven enterprise. They will be able to integrate technical systems into the business processes of modern enterprises under the demands of global competition. In such an environment engineers need excellent technical and managerial

skills to cope with today's hectic pace of change. This program serves the needs of these engineering and technology students, business, and society.

**Attachment C**

**MEMORANDUM**

Date: October 30, 2000

To: CSM Board of Trustees

From: Roderick G. Eggert

Re: Response to External Review of ETM Program Proposal

As part of its review of our proposal for a new Master of Science Degree in Engineering and Technology Management (ETM), the CCHE sent the proposal to an external expert for review. The CCHE selected Ray Kluczny, PhD, Associate Professor in the Engineering Management Department at the University of Missouri-Rolla. A copy of Professor Kluczny's review is attached to this response. This memorandum provides a summary of our comments and responses to this external review.

Professor Kluczny provides a strongly favorable review of the ETM program proposal. He indicates that the proposed program provides "*content appropriate to a Master's Degree in Engineering and Technology Management.*" Professor Kluczny points out that the Division of Economics and Business has a national reputation for its innovative experiential approach to teaching operations research, and he believes this strength is well represented in the design of the new degree program. He provides support for our enrollment projections and indicates that "*the faculty appears well qualified to deliver the proposed program of study.*"

With regard to the level of interest and demand by students for a degree in the field, Professor Kluczny indicates that his institution has experienced a high level of interest in Engineering Management. Professor Kluczny also provides strong evidence that the demand for graduates in Engineering Management by employers is very robust and that Engineering Management salaries are among the top salaries on the University of Missouri-Rolla campus. He states, "*there is a strong demand for Engineering Management graduates.*"

The CCHE asked Professor Kluczny to comment on how the program meets the needs of a modern, technologically oriented market place. He states that the program will prepare graduates for effective performance as leaders in today's complex economic environment. In addition, he feels that students in the ETM program will be able to integrate technical systems into the business processes of modern enterprises under the demands of global competition. Professor Kluczny states that "*this program serves the needs of these engineering and technology students, business, and society.*"

Though his program review on almost all points is strongly positive, Professor Kluczny articulates a couple of concerns about the proposal. Regarding program quality, he feels that it would be helpful to know that the program meets the standards of an accrediting agency or that it exists in an academic environment of accredited undergraduate degrees. We entirely agree with him on this point. All of CSM's undergraduate engineering programs are accredited by ABET. The ETM program certainly will exist in an academic environment of accredited undergraduate degrees. Our assessment program will facilitate and ensure continuous improvement. With regard to our financial projections, Professor Kluczny felt that we were generally realistic except that we may not have budgeted sufficiently for computer hardware and software.

We are sensitive to this issue and have conducted a closer review of those expected expenditures. As a result, we believe it is appropriate to budget about twice as much for computer hardware and software than is reflected in the original proposal. This increase, however, will not materially affect the financial feasibility of the proposed ETM program.

**Attachment D**

**Core Courses**

The proposed M.S. degree in Engineering and Technology Management involves 36 semester hours of coursework. Students choose either the *thesis* or *non-thesis* option. Regardless of their option, all students take a set of core courses that includes industrial accounting, managerial economics, managing in technical companies, operations research, financial management, and an integrated capstone course in engineering and technology management. These 18 credit hours of core courses provide students with the fundamental tools of engineering and technology management. A brief description of the content of each of these core courses is provided below.

**Industrial Accounting** – Concepts from both financial and managerial accounting. Preparation and interpretation of financial statements and the use of this financial information in evaluation and control of the organization. Managerial concepts include the use of accounting information in the development and implementation of a successful global corporate strategy, and how control systems enhance the planning process.

**Managerial Economics** – Designed to provide an understanding of the macro- and micro-economic forces, both domestic and international, that influence management decisions and ultimately corporate performance. Macro issues such as interest rates, economic policy, business cycles, and the financial system would be covered. Issues that are micro in nature include input demand and supply, industry factors, market structure and externalities.

**Managing in Technical Companies** – An organizational behavior (OB) course with a special emphasis on OB issues within the technical organization. It would provide an overview of the various perspectives from which individual, group, and organization behavior can be studied. An emphasis on the developments of the concepts, insights, and skills needed to effectively manage diverse individuals through a variety of situations in technical organizations.

**Operations Research Methods** – An overview of methods in operations research, including: optimization modeling (e.g. linear programming, integer programming, and network flows), and simulation. These techniques will be applied to operational and managerial decision making in industries such as manufacturing, telecommunications, and transportation and decision making related to, for example, capital budgeting, production scheduling, inventory control, supply-chain management, and network design.

**Financial Management** –The fundamentals of corporate finance as they pertain to the valuation of investments, firms, and the securities they issue. Included are the relevant theories associated with capital budgeting, financing decisions, and dividend policy. This course provides an in-depth study of the theory and practice of corporate financial management including a study of the firm's objectives, investment decisions, long-term financing decisions, and working capital management.

**Engineering and Technology Management Capstone** –The application of integrated organizational planning within the technical function of the industrial enterprise. It would

focus on achieving the correct match between organizational strategies and structures to maximize the competitive power of technology. This is a hands-on or project-related course with the proposed course delivery intended as a team-teaching approach with faculty from CSM's Division of Engineering.

Non-thesis students select 9 hours of courses from one of the Areas of Specialization listed below--Quantitative Decision Methods, or Strategy and Organization--and 9 hours of elective courses. The elective courses may include approved courses from any number of disciplines across the CSM campus including engineering, mathematics, and computer science. The courses available in the two areas of specialization are listed below (courses with an asterisk are existing courses in the Division of Economics and Business.)

**Quantitative Decision Methods**

- Project Management
- Simulation\*
- Integer Programming\*
- Linear Programming\*
- Network Models\*
- Decision Analysis\*

**Strategy and Organization**

- Management of Technology
- Manufacturing & Service Operations Management\*
- Strategy of Product Development
- Marketing for Technology-Based Companies
- Technology Entrepreneurship
- Technology Policy
- Supply Chain Management\*

**Attachment E**

**ENROLLMENT PROJECTIONS**

The attached table contains our enrollment estimates. We will admit twenty students in year one, growing to fifty students in year five. The projections of headcount and FTE assume: (1) a resident/nonresident mix similar to the current CSM undergraduate student body (75% resident/25% nonresident), and (2) that students will carry an average course load of 12 credit hours per semester as illustrated above in section 6. Note that under these assumptions, no students enrolled in the ETM program, as undergraduate seniors are included in the numbers. Their FTE would be credited to CSM undergraduate programs. Finally, the numbers reflect an attrition rate of 5 percent.

More fundamentally and as described below, the numbers in Table 1 are based on (1) a survey of CSM students summarized in Appendix D, and (2) information from several peer institutions or departments.

In July 2000, we surveyed existing CSM sophomores and juniors. The survey itself is contained in Appendix D and described more fully in section 2.4 of this document. Of the 1113 surveys mailed, we received 184 responses for a response rate of 16.5%. The important results with regard to sources of students are: (a) eighty-five percent of the respondents would consider the ETM program a more viable alternative than a traditional MBA program; (b) 31% indicate a very high likelihood that they would enroll in the ETM program as a dual B.S./M.S. endeavor, suggesting that among the respondents alone there are 40-50 potential students for the ETM program; and (c) over 31% of the respondents indicated that even if they did not enroll in the ETM Program during their current tenure at CSM, they would be highly likely to enroll in the graduate program at a later date.

The second basis for our enrollment projections is information from the following peer institutions or programs: The Pennsylvania State University (program in Quality and Manufacturing Management), Stanford University (Industrial Engineering and Engineering Management), University of Missouri at Rolla (Engineering Management), and Rensselaer Polytechnic Institute (two programs--Engineering Management, and their 5-year BS/MBA program).

The relevant information from these programs:

- (1) Student populations range from 30 to 70 full-time students per year, with most averaging 45 students.
- (2) The number of semester hours in these programs ranges from 30 to 39 hours, compared to 36

hours in our proposal.

(3) Most of these programs offer both thesis and non-thesis options, as we do in this proposal.

(4) All of these programs claim to have very low attrition rates among full-time students, although they would not quote a specific rate of attrition; part-time students have a much higher attrition rate. Given our emphasis on full-time students, we estimate an attrition rate of 5%.

Table 1: Enrollment Projections

		Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Full Implementation
1-a	In-state Headcount	15	20	26	32	38	38
1-b	Out-of-State Headcount	5	7	8	10	12	12
2	Program Headcount	20	27	34	42	50	50
3-a	In-state FTE	12	16	21	26	30	30
3-b	Out-of-state FTE	4	5	6	8	10	10
4	Program FTE	16	21	27	34	40	40
5	Program Graduates	19	26	32	40	47	47

**Attachment F**

December 18, 2000

Mr. Timothy Foster  
Executive Director  
Colorado Commission on Higher Education  
1380 Lawrence Street, Suite 1200  
Denver, Colorado 80204

Dear Tim:

Based on its review of the proposed M.S. Degree in Engineering and Technology Management, CSM's Board of Trustees believes that: the proposed degree program will be of high quality, the institution has the capacity to offer the program, and the program will be cost effective.

Quality

The program will be of high quality because of its students, faculty, and ongoing assessment program. With respect to students, we expect most students in this program to come from CSM's undergraduate programs in engineering and applied science. The excellence of these students is reflected by summary statistics for this year's freshman class: a median SAT score of 1230, and an average high-school GPA of 3.8. In addition, more than 90% of new students were in the top 25% of their high-school class. With regard to faculty, the existing faculty in the Division of Economics and Business have doctoral degrees from leading universities and carry out leading research in the areas of management science, finance, and economics. As noted by Dr. Ray Kluczny (the external evaluator for the proposal), the Division "has a national reputation for its innovative experiential approach to teaching operations research," an important part of the program. The proposed program also will take advantage of other CSM faculty to ensure that the management education in this degree program is strongly linked to engineering and applied science. Finally, the quality of the program will be assessed on an ongoing basis, as described in the proposal.

Capacity

As the proposal notes in response to CCHE comments on the concept paper (Appendix A), the Division of Economics and Business already has significant faculty skills and resources to initiate the program. The Division now is searching for an additional faculty member in the field of technology management. The institution is committed to providing sufficient faculty resources as the program grows. More generally, the program does not require additional classroom space. The program will make use of existing computer facilities, which will be augmented as the program grows

Cost-Effectiveness

As noted in Table 2 of the proposal, CSM expects the program to have revenues in excess of expenses beginning in year 2. The external evaluator assessed the financial projections and stated, "Based on my

experience in my university, I find the financial projections in the proposal to be realistic." More generally, compared to other CSM programs, the proposed program will be less costly per student because no laboratory facilities are needed.

In closing, I should add that CSM recently received dramatic validation of both the need for, and the expected quality of, this degree program in the form of a major gift from a prominent alumnus and business leader, Mr. Jerome Broussard. Mr. Broussard recently donated \$1,000,000 to CSM to support and enrich the Engineering and Technology Management program at CSM, subject to the CCHE approval of the degree. In addition, he has made a commitment to provide \$150,000 in scholarships to attract students during the first three years of the program. Such a large gift from such a respected business leader is perhaps the most convincing evidence possible of the value that this program can be expected to provide to the high-tech community.

Sincerely,

Frank Erisman, President  
CSM Board of Trustees

**Attachment G**

**PROJECTED EXPENSE AND REVENUE ESTIMATES**

Table 2 contains estimates of program costs and revenues for the first five years of its existence.

Operating expenses in line 1 are based on: (1) student numbers as contained in Table 1, (2) a course load of 12 credit hours per semester per student, (3) an average class size of 25 students, (4) a typical teaching load for a tenured or tenure-track faculty member of four courses per year, and (5) the average compensation for a CSM faculty member of \$73,449. These figures permit calculation of the number of FTE faculty members needed to teach these classes, which then is multiplied by the average compensation per faculty member.

The estimate of instructional materials (line 3) is based on \$500 per year per student.

Program administration (line 4) represents 25% of a faculty member's time, as well as marketing expenditures.

Equipment acquisition (line 9) represents computers purchased in years 1 and 4.

Library acquisitions (line 10) include both books and journal subscriptions.

State support from the General Fund (line 12) is based on the number of students and the figure of \$8113.05 per student per year.

Tuition revenue (line 13) assumes a resident/nonresident mix of 75%/25%.

		ESTIMATED AMOUNT in DOLLARS				
		Year 1	Year 2	Year 3	Year 4	Year 5
Operating Expenses:						
1	Faculty	117,518	161,588	198,312	249,727	293,796
2	Financial Aid specific to program	15,000	20,000	25,000	30,000	35,000
3	Instructional Materials	10,000	13,500	17,000	21,000	25,000
4	Program Administration	24,652	19,592	19,592	19,592	19,592
5	Rent/Lease	0	0	0	0	0
6	Other Operating Costs	0	0	0	0	0
7	Total Operating Expenses	167,170	214,680	259,904	320,319	373,388
Program Start-Up Expenses						
8	Capital Construction	0	0	0	0	0
9	Equipment Acquisitions	12,000	0	0	12,800	0
10	Library Acquisitions	11,500	3,000	3,000	3,000	3,000
11	Total Program Start-Up Exp.	23,500	3,000	3,000	15,800	3,000
TOTAL PROGRAM EXPENSES		190,670	217,680	262,904	336,119	376,388
Enrollment Revenue						
12	General Fund: State Support	97,357	129,809	170,374	210,939	243,392
13	Cash Revenue: Tuition	88,560	119,556	150,552	185,976	221,400
14	Cash Revenue: Fees	0	0	0	0	0
Other Revenue						
15	Federal Grants	0	0	0	0	0
16	Corporate Grants/Donations	0	0	0	0	0
17	Other fund sources *	0	0	0	0	0
18	Institutional Reallocation *	0	0	0	0	0
TOTAL PROGRAM REVENUE		185,617	249,365	320,926	396,915	464,792

**TOPIC:                    PROPOSAL TO OFFER A MASTER OF ENGINEERING (M.E.) AT  
                                 COLORADO STATE UNIVERSITY**

**PREPARED BY:        WILLIAM G. KUEPPER**

**I.        SUMMARY**

The Board of Agriculture requests Commission approval to offer a Master of Engineering (M.E.) at Colorado State University. The proposed degree is a course-only program intended as a “professional degree for students and practicing engineers who need updated skills but lack the time or need for a traditional research-based graduate degree.” It is an extended version of the Master of Electrical Engineering (M.E.E.) already implemented at CSU and would involve four of the engineering departments at CSU.

The stated goals of the proposed program are to provide 1) a graduate level, practice-based on educational degree beyond the B.S. degree but distinct from traditional research oriented Master’s degree, 2) a professional degree that closely meets the specific needs of engineers working in industry, government, and consulting firms, and 3) a high quality, flexible Master’s degree to prepare engineers for the rapid and revolutionary technological changes challenging the engineering profession.

If the Commission approves this proposal, the university would accept its first majors into the program in fall 2001 with an initial enrollment projected at 15 and increasing to 50 over five years. At full implementation, the program expects to produce twelve graduates per year.

The Commission raised several issues with the concept paper and asked they be addressed in the full proposal. These included issues of program duplication, the market for the degree, and the impact of the proposed degree on existing engineering programs at CSU. The external reviewer offered suggestions on the curriculum, the use of adjunct faculty, and budget. In the judgement of Commission staff, all have been appropriately addressed in the proposal.

The staff recommends approving the request for a Master of Engineering at Colorado State University.

**II.        BACKGROUND**

The concept paper was on the Commission agenda at its meeting of February 3, 2000. The Commission raised several issues to be addressed in the full proposal. The proposal was developed in the College of Engineering at CSU and submitted for peer and external review. Professor Michael Riley, Chair of the Industrial and Management Engineering Department

and Coordinator of the Master of Engineering Program at the University of Nebraska-Lincoln served as the external reviewer and his report is appended as Attachment A. The degree proposal was approved by the State Board of Agriculture on August 30, 2000, and submitted by the President of the CSU System to the Commission.

When the Master of Electrical Engineering degree program at CSU was approved by the Commission in September 1998, it carried the caveat that expansion of that type of program into other engineering departments would require a new entitlement. Early this year, a concept paper for a Master of Civil Engineering was developed. Commission staff suggested that, rather than expanding department by department, a college-wide Master of Engineering proposal be considered. The institution agreed and the proposal on this agenda is the result.

Colorado State already offers several Master's degree programs in engineering. These are research-based programs with both thesis and non-thesis tracks (referred to at CSU as Plan A and Plan B respectively) leading to the Master of Science degree. The proposed course-only program provides a third option at CSU for students who wish to do graduate work in engineering. Because of its structure and purpose, the proposed M.E. can be thought of as a continuing education program for professional engineers. It is, therefore, a conceptual extension into other engineering departments of the Master of Electrical Engineering (M.E.E.) program already in place at CSU. The proposed M.E. degree is similar to successful programs at institutions such as Stanford, Cornell, MIT, and SUNY-Buffalo.

A total of 30 credit hours of course work will be required to complete the degree with a minimum of 15 credits taken in a student's engineering department, i.e., the field in which the student would specialize. At least 24 of 30 credits required must be in CSU courses. Courses may be taken on the CSU campus or through the extended studies program (e.g. videotape).

Each participating department will establish its own specific course requirements. The four departments which will be involved in the proposed degree are Chemical and Biosource Engineering, Civil Engineering, Mechanical Engineering, and Electrical and Computer Engineering. If the Commission approves the proposed degree program, the Master of Electrical Engineering (M.E.E.) degree will be phased out and the Department of Electrical and Computer Engineering will become one of those offering the new degree.

Applicants with undergraduate degrees from accredited engineering programs are eligible for admission. Students with degrees in related fields may be admitted to the program by demonstrating competencies specified by the individual departments participating in the degree.

The projected program enrollment for the initial year is 24 students in the four departments with the first graduates in year three (Attachment B). Because the M.E. degree is aimed at practicing engineers, the institution expects that participants will be attending part-time and

will average two and one-half years to complete the degree. At full implementation, enrollment is projected to reach 123 with the program producing 49 graduates per year.

### **III. STAFF ANALYSIS**

In analyzing the concept paper and program proposal, the staff considered role and mission, duplication, program need and demand, and quality issues such as curriculum and resources.

Both the concept paper and full proposal were submitted to the other governing boards for peer review.

#### **Role and Mission and Program Duplication:**

By statute, Colorado State University “shall be a comprehensive research university.” The university has an accredited school of engineering that offers both undergraduate and graduate degrees in engineering. The addition of the M.E. would be within the mission of the institution and would represent a logical extension of the offerings of the College of Engineering.

The University of Colorado at Boulder, Denver, and Colorado Springs and the Colorado School of Mines offer Master’s of Engineering programs. The proposed program at CSU is expected to have little impact on the programs at the other institutions. None of the other institutions have a course-only degree. More importantly, the primary market for the new program is expected to be local. This is a consistent enrollment pattern for continuing education, with program location being a major factor in determining which program a person selects.

For practicing engineers in the Fort Collins area, at whom this program is aimed, distance from the existing M.E. programs can be a problem. In addition, business and industry in the Fort Collins area have research and development projects with CSU and would tend to support their employees participating in a CSU degree program.

Concerns about duplication could arise if a distance education version of the degree would be implemented and developed a significant enrollment. Discussions by the Commission relating to the offering of a degree throughout the state via distance education are still in the preliminary stages. CCHE staff suggests that it may be appropriate to ask the Extended Studies Advisory Group to examine the implications of delivering by distance education the several Master of Engineering programs at state institutions.

Because the proposed M.E. is not designed to prepare students for further graduate study, i.e., the Ph.D., the institution believes that it will have little effect on the enrollment in the M.S. degree programs in engineering at CSU. The one exception would be in the non-thesis option of those degrees. Commission staff believe that potential reduction in enrollment

could become significant the viability and cost effectiveness of the non-thesis option. The staff recommends that the College of Engineering consider what actions it may wish to take if that situation occurs.

### **Program Need and Demand**

The external reviewer notes that the “national demand for continuing education for engineers continues to exist. Practicing engineers need opportunities to upgrade their technical skills and learn about newer technologies.” The demand for engineers in industries and government agencies along the Front Range continues to grow.

The College has used surveys of its undergraduate students and local industries to develop projections of enrollment for each of the participating departments. The projections are appended as (Attachment B). Commission staff believes these enrollments are realistic given the size of the undergraduate engineering programs at CSU, the number of engineers employed in the Fort Collins area, and the interest nationally in practice-oriented master’s degree for engineers.

### **Program Quality and Resources**

The Commission relies on the governing board to assure the quality of the proposed program, its cost effectiveness, and the institution’s ability to offer the program. These assurances are provided in Attachment C. Because the M.E. will utilize courses already being offered in the existing engineering graduate programs, the program should add to the cost effectiveness of the graduate offerings. The external reviewer noted that the faculty in the several engineering departments have the experience and academic backgrounds “consistent with a high quality program” in several areas of concentration. In that context, he cautioned about the use of adjunct faculty without appropriate backgrounds and teaching skills.

In its review of the concept paper, the Commission raised the question of quality control mechanisms in a degree with no research requirement or comprehensive exam. The College plans several means of addressing that issue beyond the regular internal program reviews.

These include the approval of each student’s program of study by a faculty advisor, the Department Head, and the Graduate School. Industrial advisory committees, consisting of engineers in private practice, in local industry, and in local, state, and federal agencies will be used to review the program and suggest changes. In addition, alumni will be surveyed about the effectiveness of the program one and five years following graduation. These, in the judgement of staff, are responsive to the matter of assessment and quality control.

No additional faculty will be required to teach or administer the program. The governing board has provided assurance that the program can be implemented without the need for additional or renovated space. The proposal estimates the resources needed to offer the courses necessary for the enrollment expected in the program (Attachment D). Those courses, however, are already being offered so the marginal cost is much less than shown in

the program budgets. While no additional courses are required to implement the program, the proposal noted that, if enrollment reaches projections, the revenue generated would permit the addition of new courses to enrich the curriculum for all engineering students.

**IV. STAFF RECOMMENDATION**

**That the Commission approve the request of the Board of Agriculture to offer a Master of Engineering (M.E.) at Colorado State University.**

**Attachment A**

**REVIEW OF THE PROPOSED  
MASTER OF ENGINEERING DEGREE  
AT COLORADO STATE UNIVERSITY**

**June 10, 2000**

**Prepared by  
Michael W. Riley, Ph.D., P.E., CPE  
Professor and Chair  
Industrial and Management Systems Engineering Department  
and Master of Engineering Coordinator  
University of Nebraska-Lincoln  
Lincoln, Nebraska 68588-0518**

**EXECUTIVE SUMMARY**

This is a review of the proposal for the Master of Engineering degree at Colorado State University. The reviewer has 25 years of engineering education experience at the University of Nebraska-Lincoln College of Engineering and Technology. The reviewer's experience includes being a Department Chair (12 years), a teacher in campus and distance education graduate engineering programs, a faculty who assisted in the development of the department's Master of Engineering program and its Specialization program which preceded the Master of Engineering, and the Coordinator for Master of Engineering program for the College of Engineering and Technology at the University of Nebraska-Lincoln.

It is recommended that the Master of Engineering be granted by Colorado State University. The Master of Engineering fulfills a need to provide current technological information and other professional skills to practicing professionals. The necessary convenience of location or availability via distance education for practicing professional is likely to determine the impact of any degree duplication. The engineering professionals near Colorado State University are the most likely to benefit from the program. Any distance education duplications may be resolved by the marketplace forces, offering different areas of concentration or cooperation between universities.

Colorado State University has the qualified faculty and basic resources to offer and maintain a high quality Master of Engineering program. This report includes suggestions to facilitate the success of the Master of Engineering program.

## INTRODUCTION

This report is based upon the review of the materials entitled "MASTER OF ENGINEERING AT COLORADO STATE UNIVERSITY" dated 05/02/00. The materials were provided by William G. Kuepper, Senior Policy Advisor, Department of Higher Education, Colorado Commission on Higher Education. In addition the "Protocol for External Consultants and Peer Review of New Degree Program Proposals" was provided and used in review preparation.

## I. PROPOSED PROGRAM QUALITY

### A. Curriculum and Field of Study

The proposed Master of Engineering is an engineering professional practice oriented degree that provides for a variety of fields of study closed linked with current well established engineering specialties. The core requirements and other requirements of the curriculum are to be established by the faculties in the areas of study. The proposed degree is non-research orientated, yet provides opportunities for students to have access to current technological information as well as the flexibility to broaden one's technical education with as much as one-half of the curriculum from non-engineering areas such as business.

Curriculum program quality is a function of such factors as faculty capabilities, course work, faculty expectations and student performance. Since those primary factors are not expected to be altered by the proposed Master of Engineering, it is expected that the program quality will remain consistent with the current level of quality of Colorado State University graduate programs.

**Suggestion:** Since the specific curricula for the different areas of concentration are to be developed by the appropriate faculty groups, it is suggested that a separate faculty group review the admissions requirements from the different areas. Not all areas should require the same prerequisites but a potential concern is the level of mathematics required (especially for those with non-engineering degrees). The perception of the quality of the curriculum could be affected by a substantial difference in mathematical backgrounds for the different areas of concentration of the Master of Engineering.

**Suggestion:** Input from industrial groups should continue to be solicited as the areas of concentration are developed. Curriculum focus and customer satisfaction can be gained by such interactions.

### B. Delivery of Instruction

The Master of Engineering is to be delivered via on-campus classes and/or distance learning. The quality of the program can be influenced by the delivery mechanisms, but the value-added by a Master of Engineering delivered via distance education is expected to substantially out weight the potential quality losses resulting from a lack of personal contact. In addition, if the product delivered via distance education lacks quality the customer will quickly advise the provider.

**Suggestion:** A substantial investment in faculty time is necessary to delivery quality distance education. Preparation of materials and logistics of classroom activities are time consuming for the faculty. If quality of the "classroom deliverables" actually can be enhanced due to the extra effort that is necessary for electronic distance education. Recognition of this additional time commitment by faculty is necessary to maintain quality distance education. Also, technical assistance to the faculty for such tasks as preparation of distance education materials and web site management are suggested as mechanisms to aid in maintaining the quality of a distance education effort.

## II. INSITITUTIONAL CAPACITY

### A. Faculty

The credentials of the faculty including their experience and academic backgrounds are consistent with a high quality program. The faculty in the College of Engineering at Colorado State University are well qualified and prepared to deliver a Master of Engineering program in several areas of concentration.

**Suggestion:** Any use of adjunct faculty should be carefully monitored. Program quality could possible suffer if adjunct faculty do not possess appropriate backgrounds and teaching skills.

**Suggestion:** Non-tenured faculty could be disadvantaged by participating in some distance education activities because little credit toward tenure may be recognized for additional distance education efforts.

### B. Resources

Additional capital expenditures should not be needed to implement the Master of Engineering. If the Master of Engineering is to be offered via electronic means in a distance education effort, then specialized software, technical assistance and other computer capabilities would be needed. The distance education mechanism used determines the other expected delivery costs which are not described in this proposal. Library and computer access can typically be provided by electronic means for distance education students.

### C. Budget

The proposal suggests that no additional costs are needed for the additional degree offering. In term of hours of instruction there should be no additional requirements. The additional time needed for distance education efforts will not affect the hours of instruction, but it will impact the overall faculty time. To maintain a quality program, the level of distance education activity will impact budgets at least indirectly.

**Suggestion:** The need for additional resources are relatively small to add an additional Master's degree. This reviewer does not believe that the need for additional resources as described in the proposal is zero. Depending on the mode of distance education delivery, technical support and

assistance is expected to be needed for quality delivery of course work. Perhaps those resources are already available and unknown to the reviewer. Secondly, instituting late afternoon and evening classes for graduate faculty will have an indirect cost associated with it unless very careful planning is instituted. Based on my personal experience as a faculty and a chair, a faculty that spends a full day with academic duties and then teaches an evening class cannot be as productive in research, teaching preparation and service as one who does the same daily activities and does not teach an evening class.

### **III. STUDENT INTEREST AND DEMAND**

The national demand for continuing education for engineers continues to exist. Practicing engineers need opportunities to upgrade their technical skills and learn about newer technologies. In addition, engineers also need access to education to enhance their management and other related organizational skills, both the technological and technical management skills are in demand and have reasonable student interest.

### **IV. DEMAND AND NEED FOR GRADUATES**

#### **A. Employability**

The demand for engineers now and the foreseeable future is high. The fast pace of changing technology and the desire of practicing professionals to improve their skills and abilities is expected to drive the demand for Master of Engineering graduates. Many engineers who would likely choose the Master of Engineering degree program are already employed and are trying to enhance their professional credentials. Access to graduate degrees such as the Master of Engineering is typically considered an advantage for a firm employing engineers.

#### **B. National Degree Production and Need for Graduates**

From the 1998 edition of the American Society for Engineering Education (ASEE,) Profiles of Engineering and Engineering Technology Colleges, a brief review of the index indicated that the Masters of Engineering for chemical engineering, computer engineering, electrical engineering, civil engineering and mechanical engineering are available nationwide. The review of the index also indicated that for each area approximately twenty universities had such a Master of Engineering program. This estimate of the number of universities involved in an area is very conservative because the listing of Master of Engineering degrees without specific, official areas of concentration in their titles was not provided.

Of the five areas listed above, examples of schools that had specific programs in three or more of the areas were: University of South Florida, Vanderbilt, University of Maryland-College Park, Texas A&M, Penn State, University of Houston, and Old Dominion University. From a geographical prospective, the University of Idaho produced 60 masters degree students in 1997- 98 and 40 of those were the Master of Engineering. The University of Nebraska-Lincoln began its Master of

Engineering in late 1999 and has over 30 new students in 3 areas of concentration (4th area to be added in the summer of 2000). In 1997, the University of Wyoming, Utah State University, Kansas State University, Kansas University, South Dakota School of Mines and Technology, and University of Nevada-Reno did not list a Master of Engineering degree in the ASEE report, The University of New Mexico reported one graduate in a Master of Engineering. The University of Colorado at Boulder reported 27 Master of Engineering graduates for 1997-98. The Colorado School of Mines reported the Master of Science and Master of Engineering degrees in aggregate for selected areas of concentration. Assuming approximately half of the aggregate totals for each degree, it is estimated that there were 25 or more Master of Engineering degrees from the Colorado School of Mines in 1997-98. Finally, some Universities offer degree programs that would be similar to the Master of Engineering but not have that title. It is evident from that data that the Master of Engineering is a viable and accepted degree by practicing professionals and respected universities.

## **V. ECONOMIC IMPACT**

This reviewer does not have direct information about the potential economic impact of the Master of Engineering to Colorado. From personal experience it is apparent that jobs are available for persons with all degrees in engineering. With the Master of Engineering primarily focused on professional practice, it is likely that more individuals will have the opportunity for graduate education and thus be better prepared to contribute to economic growth and technological advancement.

## **VI. PROGRAM DUPLICATION**

The duplication of the Master of Engineering degree at Colorado State University is most likely to increase the number of graduate students at Colorado State University. It is the experience of this reviewer that convenience of taking the courses is highly important to practicing professionals. If a degree program from two schools were offered at the same time via the same distance education mode, then direct program duplication would exist. Individuals who are more likely to focus on engineering practice rather than research and who have easy access to the course work (via close proximity or distance education) are the students that will be served.

There will likely be a shift in some current graduate programs of study at Colorado State University with a new Master of Engineering because Plan C students will likely decline. It is also likely that the aggregate number of graduate degree will increase even with the decline in Plan C, because more potential students will have graduate opportunities available to them. In addition, as the economic growth continues in and around Colorado State University, additional demands for engineering graduate education should continue.

The degree may be duplicated at other institutions of higher learning but the reasonable availability of the degree as judged by the student is probably not being duplicated. Thus, it is not unnecessary

duplication, if it is reasonable and desirable to serve those students who cannot or will not participate in a Master of Engineering program at another less convenient site.

## **VII. NEEDS OF TECHNOLOGICALLY-ORIENTED MARKET PLACE**

This proposed Master of Engineering is to provide opportunities for practicing engineers and other technically trained individuals opportunities to upgrade their skills and learn of new technological advances. The proposal focuses on meeting some of the needs of the technologically-oriented market place and thus is a program that is expect to make a positive impacts on that market place.

### **SUMMARY**

The Master of Engineering degree provides some distinct advantages. First, it provides opportunities for engineers to update and learn new skills. Second, it provides a recruiting tool for engineering companies because of the availability of a part time master's program.

The Master of Engineering will fit with current engineering graduate programs at Colorado State University.

The need for engineers to obtain a master's degree is expected to continue. The availability of a Master of Engineering at Colorado State University will contribute to a positive environment for Colorado industries.

The faculty are well prepared to deliver quality graduate programs. Detailed curriculum materials are not included in the proposal. The curriculum for the areas of concentration are to be developed by the faculty primarily using current course work.

Facilities for videotape distance education are apparently in place. Other distance education delivery materials are being considered. On campus facilities are available for course delivery.

No additional faculty or operating expenses are anticipated in order to initiate the Master of Engineering areas of concentration.

Success of the Master of Engineering program is dependant on support from the College Dean and the Graduate School. These two issues are not specifically addressed in the report.

The policies for accountability of quality of programs are in place and provide a mechanism for program improvement. Program termination criteria or responsibilities were not outlined.

### **CONCLUSION**

There is a need for a professional practice-oriented engineering master's degree nation wide and in Colorado. Convenient access is an important concern to student. Providing a Master of Engineering degree at Colorado State University would provide additional opportunities for advancing engineering education in Colorado.

**Attachment B**

**Enrollment Projections**

We assume each student will pursue the degree on a part-time basis over 2 1/2 years, i.e., each student takes 12 credits/year.

We have assumed zero enrollment erosion because of the largely non-traditional student population we expect to dominate the degree.

Since this is a totally new type of degree in Colorado, we do not have any in-state data on which to base our student head count estimates. We are also hampered in using historic data from out-of-state schools by the fact that responses to this kind of program have been very much a function of local demographics as well as the prevailing business climate. Based on all this uncertainty, we have chosen to base our estimates of student numbers on the number of students who have approached us over the last year expressing a serious interest in pursuing this degree if it is offered in our Department. In arriving at the numbers in this table, we have taken a conservative approach and have tried to err on the low side of what we believe will be the range of interest.

**CHEMICAL AND BIORESOURCES ENGINEERING**

		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Full Implementation
1-a	In-state Headcount	3	6	8	10	11	13
1-b	Out-of-state Headcount	0	1	2	2	2	2
2	Program Headcount	3	7	10	12	13	15
3-a	In-state FTE	1.2	2.4	3.2	4.0	4.4	5.2
3-b	Out-of-state FTE	0	0.4	0.8	0.8	0.8	0.8
4	Program FTE	1.2	2.8	4.0	4.8	5.2	6.0
5	Program Graduates	0	0	3	4	5	6

CIVIL ENGINEERING

		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Full Implementation
1-a	In-state Headcount	6	10	15	20	22	25
1-b	Out-of-state Headcount	2	2	4	5	5	5
2	Program Headcount	8	12	19	25	27	30
3-a	In-state FTE	2.4	4.0	6.0	8.0	8.8	10.0
3-b	Out-of-state FTE	0.8	0.8	1.6	2.0	2.0	2.0
4	Program FTE	3.2	4.8	7.6	10.0	10.8	12.0
5	Program Graduates	0	0	5	8	9	12

ELECTRICAL AND COMPUTER ENGINEERING

		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Full Implementation
1-a	In-state Headcount	4	10	20	25	27	40
1-b	Out-of-state Headcount	1	2	4	6	7	8
2	Program Headcount	5	12	24	31	34	48
3-a	In-state FTE	1.6	4	8	10	10.8	16
3-b	Out-of-state FTE	0.4	0.8	1.6	2.4	2.8	3.2
4	Program FTE	2.0	4.8	9.6	12.4	13.6	19.2
5	Program Graduates	0	0	5	7	12	19.2

MECHANICAL ENGINEERING

		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Full Implementation
1-a	In-state Headcount	6	10	15	20	22	25
1-b	Out-of-state Headcount	2	2	4	5	5	5
2	Program Headcount	8	12	19	25	27	30
3-a	In-state FTE	2.4	4.0	6.0	8.0	8.8	10.0
3-b	Out-of-state FTE	0.8	0.8	1.6	2.0	2.0	2.0
4	Program FTE	3.2	4.8	7.6	10.0	10.8	12.0
5	Program Graduates	0	0	5	8	9	12

**Attachment C**

**MEMORANDUM**

TO: William G. Kuepper  
Senior Policy Advisor  
Colorado Commission on Higher Education

FROM: Dave Clark  
Vice Chancellor for Academic Affairs

DATE: December 15, 2000

RE: CSU Master of Engineering Assurances

I am pleased to certify that the State Board of Agriculture has assured that the CSU proposal for a Master of Engineering program will be a quality degree, that it will be cost-effective and well within the institution's capacity to offer. SBA policy requires institutions to address these issues twice during program development. Briefly, the steps are:

1. Having passed a review process that qualifies the potential degree to be listed in the institution's Academic Planning Report, a brief concept paper is developed. The concept paper outlines the proposed program's goals, the program's basic design, the market it plans to serve, and the reasons why the program is appropriate to the institution and its role and mission (and for internal use, cost of the program and source of funds required).

College dean(s) review the concept paper to determine if proposed program fits unit/college strategic plan. Tentative funding commitment is obtained from responsible person(s).

The concept is submitted to the Provost/Vice President for Academic Affairs for review to see whether the program meets the Academic Affairs strategic plan. The Provost is responsible for obtaining the President's commitment. The concept paper is then forwarded to the CSU System Vice Chancellor for Academic Affairs for comment. The Vice Chancellor requests review of the concept paper by the other two CSU System institutions to assure no System conflicts prior to forwarding it to the CCHE staff. CCHE staff reviews for statewide implications, market outlook, pool size of prospective students, career patterns and placement record of graduates of similar programs. The staff also ensures that other state institutions have opportunity to comment on the concept.

2. Following CCHE staff and Commission action, if the institution decides to proceed, the proposal is developed under institutional guidelines to assure the program will be of high quality and that costs will be covered. The proposal is reviewed by college and university curriculum committees and (for graduate programs) the graduate school council, and must be favorably acted on by the faculty council or senate. Before being put before the State Board, the proposal must be approved by the institution Provost/Vice President for Academic Affairs and the President. Of course, they are particularly careful to assure that quality, cost-effectiveness and institutional capacity are established in the proposal.

The rigor of these two processes assures that CSUS institutions carefully consider and certify to the Board that a proposal for a new degree meets expectations for quality, cost-effectiveness and institutional capacity.

In the case of the Master of Engineering proposal, other evidence exists as well. Capacity and cost-effectiveness issues are examined and reported in the projection tables required by CCHE policy and attested to by program administrators in each of the engineering departments and by financial officers as well. The program quality issue is addressed by the facts that the CSU College of Engineering has been recognized as one of the premier engineering education colleges in the United States, that the external reviewer vouches for the program's need and quality, and by proposed use of an engineering advisory committee or board to provide continuing evaluation of the program for each of the four departments involved (chemical and bioresources civil, electrical and computer, and mechanical). These boards will consist of representatives from prominent Colorado firms and agencies, including CH2M Hill, Coors, State Engineer's Office, Colorado Department of Transportation, Hewlett Packard, Lockheed/Martin, Seagate, Maxtor and IBM. The boards will assure not only that the program serves student desire for a graduate engineering program that prepares them for existing and future high technology opportunities, but that it maintains currency in addressing industry's needs.

In short, Bill, I believe the Board is fully confident that this program will be a valuable addition to Colorado's array of graduate engineering degree programs.

Thank you.

Cc: Loren Crabtree  
Barbara Montgomery  
Steve Roderick

**Attachment D**

**Projected Expenses and Revenues**

These tables document what the program will cost and how the institution plans to cover the costs. All cost and revenue projections should be in constant dollars (do not include an inflation factor).

We assume we are offering 30 credits of course work/year as would be required for students to complete the program in one year. Taking a full teaching load as 12 credits/year/faculty requires 2.5 faculty to teach the program. The average department 9-month faculty salary, including department heads, is:

Chemical and Bioresource Engineering	\$74,600
Civil Engineering	\$83,100
Electrical and Computer Engineering	\$83,600
Mechanical Engineering	\$77,600

We have estimated 9 TA's for each department prorated over all programs within a department. We used an estimated cost of \$15,000 for each department.

Calculated from in-state FTE student count x \$5,184.

Calculated from estimated credit hours x \$150 for in-state and \$581 for non-resident students.

18. All reallocations will occur within the individual departments.

**CHEMICAL AND BIORESOURCES ENGINEERING**

		ESTIMATED AMOUNT IN DOLLARS				
		Year 1	Year 2	Year 3	Year 4	Year 5
	Operating Expenses					
1	Faculty	\$186,500	\$186,500	\$186,500	\$186,500	\$186,500
2	Financial Aid Specific to Program	0	0	0	0	0
3	Instructional Materials	5,000	5,000	5,000	5,000	5,000
4	Program Administration	10,000	10,000	10,000	10,000	10,000
5	Rent/Lease	0	0	0	0	0
6	Other Operating Costs	15,000	15,000	15,000	15,000	15,000
7	Total Operating Expenses	\$216,500	\$216,500	\$216,500	\$216,500	\$216,500
	Program Start-Up Expenses					
8	Capital Construction	0	0	0	0	0
9	Equipment Acquisitions	0	0	0	0	0

10	Library Acquisitions	0	0	0	0	0
11	Total Program Start-Up Exp.	0	0	0	0	0
	TOTAL PROGRAM EXPENSES	\$216,500	\$216,500	\$216,500	\$216,500	\$216,500
	Enrollment Revenue					
12	General Fund: State Support	6,221	12,442	16,589	20,736	22,810
13	Cash Revenue: Tuition	7,650	17,772	28,344	31,944	33,744
14	Cash Revenue: Fees	0	0	0	0	0
	Other Revenue					
15	Federal Grants	0	0	0	0	0
16	Corporate Grants/Donations	0	0	0	0	0
17	Other Fund Sources*	0	0	0	0	0
18	Institutional Reallocation*	202,629	186,286	171,567	163,820	159,946
	TOTAL PROGRAM REVENUE	\$216,500	\$216,500	\$216,500	\$216,500	\$216,500

CIVIL ENGINEERING

		ESTIMATED AMOUNT IN DOLLARS				
		Year 1	Year 2	Year 3	Year 4	Year 5
	Operating Expenses					
1	Faculty	\$207,750	\$207,750	\$207,750	\$207,750	\$207,750
2	Financial Aid Specific to Program	0	0	0	0	0
3	Instructional Materials	5,000	5,000	5,000	5,000	5,000
4	Program Administration	10,000	10,000	10,000	10,000	10,000
5	Rent/Lease	0	0	0	0	0
6	Other Operating Costs	15,000	15,000	15,000	15,000	15,000
7	Total Operating Expenses					
	Program Start-Up Expenses					
8	Capital Construction	0	0	0	0	0
9	Equipment Acquisitions	0	0	0	0	0
10	Library Acquisitions	0	0	0	0	0
11	Total Program Start-Up Exp.	0	0	0	0	0
	TOTAL PROGRAM EXPENSES	\$237,750	\$237,750	\$237,750	\$237,750	\$237,750
	Enrollment Revenue					
12	General Fund: State Support	12,442	20,736	31,104	41,472	45,619
13	Cash Revenue: Tuition	24,744	31,944	54,888	70,860	74,460
14	Cash Revenue: Fees	0	0	0	0	0
	Other Revenue					
15	Federal Grants	0	0	0	0	0
16	Corporate Grants/Donations	0	0	0	0	0
17	Other Fund Sources*	0	0	0	0	0
18	Institutional Reallocation*	200,564	185,070	151,758	125,418	117,671
	TOTAL PROGRAM REVENUE	\$237,750	\$237,750	\$237,750	\$237,750	\$237,750

ELECTRICAL AND COMPUTER ENGINEERING

ESTIMATED AMOUNT IN DOLLARS						
		Year 1	Year 2	Year 3	Year 4	Year 5
	Operating Expenses					
1	Faculty	\$209,000	\$209,000	\$209,000	\$209,000	\$209,000
2	Financial Aid Specific to Program	0	0	0	0	0
3	Instructional Materials	5,000	5,000	5,000	5,000	5,000
4	Program Administration	10,000	10,000	10,000	10,000	10,000
5	Rent/Lease	0	0	0	0	0
6	Other Operating Costs	15,000	15,000	15,000	15,000	15,000
7	Total Operating Expenses	\$239,000	\$239,000	\$239,000	\$239,000	\$239,000
	Program Start-Up Expenses					
8	Capital Construction	0	0	0	0	0
9	Equipment Acquisitions	0	0	0	0	0
10	Library Acquisitions	0	0	0	0	0
11	Total Program Start-Up Exp.	0	0	0	0	0
	TOTAL PROGRAM EXPENSES	\$239,000	\$239,000	\$239,000	\$239,000	\$239,000
	Enrollment Revenue					
12	General Fund: State Support	8,294	20,736	41,472	51,840	55,987
13	Cash Revenue: Tuition	14,172	13,944	63,888	86,832	97,404
14	Cash Revenue: Fees	0	0	0	0	0
	Other Revenue					
15	Federal Grants	0	0	0	0	0
16	Corporate Grants/Donations	0	0	0	0	0
17	Other Fund Sources*	0	0	0	0	0
18	Institutional Reallocation*	216,534	204,320	133,640	100,328	85,609
	TOTAL PROGRAM REVENUE	\$239,000	\$239,000	\$239,000	\$239,000	\$239,000

**TOPIC:                    PROPOSAL TO OFFER A BACHELOR OF ARTS IN  
INTERDISCIPLINARY STUDIES AT FORT LEWIS COLLEGE**

**PREPARED BY:        WILLIAM G. KUEPPER**

**I.        SUMMARY**

The State Board of Agriculture requests Commission approval of a Bachelor of Arts (B.A.) in Interdisciplinary Studies at Fort Lewis College. The proposed program is intended to provide "an academic foundation" for students seeking teacher licensure and to provide, for all students, a broad-based interdisciplinary program of study that would prepare them for a "wide range" of endeavors following graduation. It was designed partly in response to the state's adoption of a performance-based teacher education model and partly in response to the College's internal review processes.

The degree is designed to be completed in four years, requiring a total of 120 college level credit hours. The curriculum design requires a student to earn 44 credits in the major, 33 in general education courses, 40 credits in professional knowledge and 3 elective credits, or 43 upper division credits in liberal arts courses. Students who enroll in the professional knowledge courses spend a minimum of 800 hours in an accredited K-12 classroom. All students enrolled in this degree program are required to complete Eng. 317. The ETS Academic Profile will be administered as part of this course and indicate the student's grasp of general education knowledge while the writing assessment will indicate the student's ability to communicate clearly and coherently.

The proposed degree program raised no issues about role and mission, program duplication, or program need and demand. The Commission raised several issues at the concept paper stage that were related to the program's preparing students for Early Childhood and Elementary Teacher Licensures. These issues were included in the site review of teacher education programs at Fort Lewis conducted in October 2000. Fort Lewis has strengthened the general education requirements (Attachment A) and focused the choice of courses that are designated as content courses. The curricular concerns were raised during the site review and the review of the program proposal by Commission staff have been satisfactorily addressed in the institution's response to the Teacher Education site review report.

Commission staff recommends approval of the request for a B.A. in Interdisciplinary Studies at Fort Lewis College.

## **II. BACKGROUND**

The concept paper was on the April agenda of the Commission. The Board of Agriculture approved the program proposal at its meeting of June 14, 2000, subsequently submitting it to the Commission for action. Subsequently, Teacher Education programs at Fort Lewis, including the new degree proposal, were subject to a site review in October. The results of that process have been incorporated, as appropriate, into this analysis of the program proposal.

The proposed program in Interdisciplinary Studies has been developed in response to the changes in teacher preparation requirements and the institution's own assessment that it needed to improve the content preparation of its teacher education candidates. The result is the proposed interdisciplinary major, which also contains an option for those students not pursuing licensure. The proposed program was piloted over the last two years as an "Interdisciplinary Study" option within the Student Constructed Major. That major is the one currently used by students preparing for teacher licensure. It will be replaced for that purpose if the proposed program is approved.

The Interdisciplinary degree program requires 120 credits (Table I). Thirty-three (33) credits will be in general education, and 44 credits in four "cognate" areas, that are more commonly referred to as content areas. The general education requirements are the same for the three tracks -- Interdisciplinary Major without licensure, Interdisciplinary Major with Elementary Teaching Licensure, and Interdisciplinary Major with Early Childhood licensure. The content area requirements in the Early Childhood track contain more language arts, literacy, and social studies courses than the other two tracks that are evenly distributed among math, sciences, language arts, and social sciences

For students pursuing teacher licensure in either early childhood or elementary education, forty of the remaining credits are in professional knowledge courses (i.e., field experience and education courses) and three are electives. Specific course requirements for the two education tracks are appended as Attachment B. For those students taking the program as a liberal arts degree and, therefore, not required to do the professional knowledge courses, 24 credits the remaining 43 credits are in upper division content courses.

**TABLE I**

<b>Minimum number Of credits Required</b>	<b>Interdisciplinary Major Only</b>	<b>Major and Elementary Teaching license</b>	<b>Major and Early Childhood Teaching license</b>
General education/ in four theme areas	33 <sup>1</sup>	33 <sup>1</sup>	33 <sup>1</sup>
Math	3	3	3
GS 496 Senior Seminar	2-4	2-4	2-4
Comp 150	4	4	4
Lib 150	1	1	1
Es 100	1	1	1
Major	44	44	44
Math	10	10	3
Science	12	12	3
Social studies	10	10	20
Language arts	12	12	18
Specific courses are included on the attached list.			
Teacher licensure	0	40	40
Electives	43 <sup>2</sup>	3	3
<b>TOTAL:</b>	<b>120</b>	<b>120</b>	<b>120</b>

**III. STAFF ANALYSIS**

Because the proposal seeks both degree program approval and Early Childhood and Elementary Education authorization, the analysis is divided into two parts.

**Part I: Analysis of the Degree Program**

In reviewing the concept paper and program proposal, the Commission staff considered role and mission, program duplication, program need and demand, and quality issues, including curriculum and resources. The concept paper and the full proposal were shared with the other governing boards for peer review.

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1 See appendix A for distribution by theme areas. One course in each theme area must be upper division.

2 Students in this track must select 12 additional hours from the selected courses in two of the content areas. The other 19 credits are free electives.

### **Role and Mission and Program Duplication**

Fort Lewis College is defined in statute as a general baccalaureate institution offering selected undergraduate professional programs. The College has refined that role by focusing its professional programs in the areas of education and business, along with its array of degree programs in the arts and sciences. Teacher education has been part of the institution since its origins as a junior college. The proposed program is clearly within the institution's role and mission. Program duplication is not seen as an issue.

### **Program Need and Demand**

The proposal notes that the need for new Early Childhood and Elementary teachers in the southwestern part of Colorado will be increasing. Teacher retirements and a substantial growth in population will contribute to that need. For example, the population of Fort Lewis' home county has increased over 30% over the past decade and that trend is expected to continue for the foreseeable future.

The proposed program will directly replace the Student Constructed major as a vehicle for teacher preparation. Thus a conservative estimate of student demand assumes that the students who would otherwise be in the Student Constructed major will select the new program. It is likely that students currently pursuing licensure through other majors also will consider the Interdisciplinary Studies program. The enrollment table for the program (Attachment C) projects an initial enrollment of 30 students increasing modestly to 35 at full implementation. If existing programs, beyond the Student Constructed major, are withdrawn for use as teacher preparation, the enrollment figures could increase substantially. Because initial enrollments will transfer in from other programs, the projected number of graduates per year closely parallel the program enrollment.

### **Program Quality and Resources**

In reviewing the concept paper, Commission staff saw no problems with the structure and general requirements of the proposed degree. The full proposal enumerates the specific courses, which can be used to meet the requirements in general education and in the cognate areas. A review of those lists raised two quality issues with Commission staff.

The College has a requirement that at least 50 credits of the 120 credits required for a degree be earned in upper division (i.e., junior and senior level) courses. In this program, a student pursuing licensure would be required to take as few as 9 of the 44 credits required in the cognate areas at the upper division level and all of those would be either taught in the Education Department or designed specifically for teachers. The overwhelming majority of the upper division requirements for the degree would then be met by teacher candidates in teaching licensure courses.

This raised the question of quality and integrity of the degree for a student not pursuing licensure. Good academic advising will be crucial for those students to ensure that will have an appropriate mix of upper and lower division course work, and integration of that course work appropriate to an interdisciplinary degree. Commission staff believes it is essential that, for students doing the program as a liberal arts degree, at least 50 percent of the work in the cognates be required at the upper division.

A more focused curricular issue was that of the mathematics requirements for students pursuing this degree program. In reviewing course descriptions, it was ascertained by Commission staff and the site review team that a student doing this program for licensure in either early childhood or elementary education could have completed the mathematics requirements without college algebra or its equivalent. The college currently is considering initiating a college-wide mathematics requirement in its general education program. Until such time that is accomplished, Teacher Education will require, beginning January 1, 2001, that all early childhood and elementary education students complete a course in college algebra.

Apart from mathematics, the site review team in its report on Fort Lewis notes that the proposed program of study with its general education, cognate and teacher licensure requirements does meet the content standards established by the Commission and the professional preparation standards of the CDE.

No new courses will be required for the program and faculty resources are currently available to perform the necessary instruction and administration of the program. The program will require no additional space and the operational budget includes no start-up costs (Attachment D). Anticipated revenues are projected to be sufficient to support the program, so no institutional reallocation would be necessary.

## **Part II: Analysis of Teacher Education Performance Criteria**

This section is based on the materials submitted in the proposal and the findings of the teacher education site review. In its analysis of teacher education proposals, the Commission's primary concern centers on three critical aspects of program quality—content, assessment, and field experience.

### **Content**

CCHE's Teacher Education Policy defines a quality teacher education preparation program as one characterized by a strong general education curriculum, coupled with a strong arts and science major. The former provides scope or breadth, the latter provides depth.

The proposed Interdisciplinary Studies program utilizes a design that supplements the general education course work with additional content courses that cover the five primary

content areas taught in the K-6 classroom (Table I). Fort Lewis has recently revised its general education requirements. After further consultation with CCHE staff, it strengthened the general education core to include a required Mathematics course. The remaining general education requirements fall into four thematic areas—1) *Culture (Anthropology, English, History, Philosophy, Sociology, Theatre)*, 2) *Systems and Institutions (Anthropology, Economics, History, Philosophy, Political Science, and Sociology)*, 3) *Technology (Agriculture, Anthropology, Biology, Geology, Physical Science)*, and 4) *Natural Environment (Biology, Chemistry, Geology, Physical Science)*. Each student is required to complete at least two courses in each thematic area, one of which is lower division and one is upper division credit hours. All students must enroll for 8 credits of writing courses. Another change is that the original general education plan allowed a student to count credits toward General Education lower division and Major requirements. The corrected interpretation of the general education language is that a certain courses (e.g., Economics 170) may satisfy general education or interdisciplinary major, but may not count satisfy both, i.e., double dipping.

The interdisciplinary major specifies that a course that fulfills general education may not be also counted toward meeting the major requirements. During the Teacher Education Site Review, FLC consulted with CCHE and CDE to review the courses and course mix that best provides the prospective teacher candidate with the depth of knowledge and the ability to connect mathematics with science and science with history and history with language arts. With the proposed Interdisciplinary major limiting course work to four content areas (Table I), a student is provided with substantial breadth. The interdisciplinary major meets the content area test of CCHE's Teacher Education Policy.

### **Assessment**

Fort Lewis is adopting a diverse assessment strategy for the Interdisciplinary Studies program. The first key assessment point occurs in the English course when all enrolled students take the Academic Profile (i.e., a sophomore exam) and writing assessment. The Academic Profile will indicate the student's grasp of general education knowledge and the writing assessment will indicate the student's ability to communicate clearly and coherently. According to interviews with master teachers, writing skills are a weakness of newly hired teachers regardless of the institution from which they graduate.

The assessment strategy includes defined learning outcomes for students, performance on a senior capstone project, a portfolio documenting proficiency in content areas, performance scores on the content sub-test of the PLACE exam, and alumni surveys.

The most compelling evidence for validating the content is the total score earned on the PLACE content examinations by current FLC students. This provides a rigorous benchmark for performance in content and the new curriculum should improve the Math sub-scores.

## **Field Experience**

In CCHE's Teacher Education Policy, the field experience is defined as substantial clinical training that occurs under the direct supervision of expert teachers. It is measured both quantitatively, i.e., a minimum of 800 hours that begins early in the academic program, and qualitatively, i.e., the focus, scope, and intensity of the experience. The field experience requires the student to work closely with the classroom teacher and is interwoven throughout the program to help ensure that students are meeting the CCHE standards, model content standards, and are connecting theory with practice.

Teacher licensure candidates complete field studies as an integral part of teacher education course work. The students receive specific assignments for field study in the courses, with each assignment having predetermined learning outcomes. The assignments address standards such as Colorado K-12 Model Content Standards and CDE Performance-Based Standards for Colorado teachers.

To provide greater opportunity for field experience early in a student's training, Fort Lewis is introducing a 30-60 hour field component in its new education courses (a total of up to 240 hours). With other changes being considered, the amount of field experience concentrated in student teaching will be reduced from over 70% to approximately 50%. The college has enhanced its field experience significantly by specifying the active involvement of arts and science faculty in the field. The faculty will evaluate teacher candidates' content knowledge and the ability to adapt this knowledge to the classroom.

The selection of supervising teachers is a critical aspect of successful field training. As one option in its teacher education programs, Fort Lewis has established partnerships with area schools. This provides a vehicle for close relationship between college students, education faculty, and teachers in the participation. In response to concerns about the training of supervising teachers in schools other than partnership schools, Fort Lewis has hired a faculty member with lengthy experience in the local school district to assist in the selection and training process. The college will communicate to school principals, specific criteria for master teachers to qualify as supervising teachers, with the principals charged with providing assurance that the teachers are well-versed in performance-based standards. In addition, Fort Lewis will provide more on-site training for supervising teachers, a model that has worked well in the partnership schools. The college is also developing a web-based resource to assist in the selection and training of the supervising teachers. It has specified the criteria that will be used to select supervising teachers, defined the role and expectations of supervising teachers, including evaluation and reporting standards for student teacher performance.

The college has improved the feedback student teachers get on their content knowledge and their ability to use that knowledge in the school classroom. Twelve academic departments have agreed to provide faculty for supervision visits to student teachers with a goal of having at least 25% of the visits done by content areas faculty. The new teacher education program includes a seminar that will meet prior to, during, and at the completion of student teaching. During that seminar, students will be meeting with content area faculty as well as teacher education faculty.

**IV. STAFF RECOMMENDATION**

**That, the Commission approve the request of the Board of Agriculture for a Bachelor of Arts in Interdisciplinary Studies at Fort Lewis College on the conditions that:**

- 1) the institution demonstrate to Commission staff that the mathematics requirement for a course equivalent to college algebra has been initiated for all students in this degree program, and**
- 2) students, other than those pursuing teacher licensure, i.e., taking the program as a liberal arts degree, be required to compete at least 50 percent of the credits in the major and electives at the upper division level.**

**Attachment A**

**General Education**

<b>GENERAL ED AREA</b>	<b>COURSE / DISCIPLINES</b>	<b>CREDITS</b>
<b>Mathematics</b>	Math 120 College Algebra or Math 135 Quantitative Reasoning	3
<b>Communication</b>	Comp 150 -- College Writing	8
<b>Exercise</b>	ES 100 Fitness and Wellness	1-3
<b>Information</b>	Library 150 Research Methods	1
<b>Culture</b>	Anthropology, English	7
<b>Systems</b>	Anthropology, Economics, History, Philosophy, Political Science, Sociology	7
<b>Technology, including one lab-based course</b>	Agriculture, Anthropology, Biology, Chemistry, Geography	7
<b>Environment, including one lab-based course</b>	Biology, Chemistry, Geology, Philosophy, Physical Science	7
<b>Senior Capstone Course</b>		<b>2-4</b>
<b>TOTAL CREDITS</b>		<b>43-46</b>

**Content Major – Interdisciplinary Degree Program**

**In the four content areas, students’ course selection is pre-defined or limited to selected courses**

	<b>COURSE</b>	<b>CREDITS</b>
<b>Mathematics (3 courses)</b>	M 201 Introductory Statistics M 315 Real Numbers and Geometry M 218 Math for Liberal Arts Major I (College Algebra – prerequisite) M 318 Math for Liberal Arts Major II	<b>10</b>
<b>Science (3 courses, with at least one lab-based course)</b>	One course each in Biology, Geology, and Physical Science  Biology 105 General Biology Biology 121 Anatomy and Human Physiology  Geology 110 Earth Science, Geology 150 Geology of the Southwest Geology 401 Earth Science	<b>12</b>

	PHSc 100 Physical Science PHSc 200 Introductory Astronomy	
<b>Language Arts (4 courses)</b>	E 317 Writing and Editing	<b>12</b>
	E 335 Linguistics	
	Ed 327 Children’s Literature	
	Select one of the following Eng 265 Semantics Eng 366 Teaching writing Eng 378 Eng 280 Literature of the Southwest	
<b>Social Studies (3 courses)</b>	Psych 354 Child Psychology	<b>3</b>
	Select two of the following: Econ 170 Current Economic Issues Geog 271 World Geography Geog 320 Regions of North America Hist 280 US History 1600 – 1865 Hist 281 US History 1865 – Present Hist 324 Colorado History PS 110 US National Government SW 323 SW Indian History Soc 376 Language and Behavior	<b>7</b>

**Attachment B**

Teacher education courses required for an elementary teaching license

<u>Course Number</u>	<u>Title</u>	<u>credits</u>	<u>Field Study hours</u>
Ed 1902	Introduction to Education in America	4	30
Ed 1903	Culture of Childhood and Youth	4	30
Ed 3905	Math, Sci, Soc St and Tech Literacy	8	60
Ed 3906	Lang, Art, Mus and Movmnt Literacy	6	60
Ed 3904	Indvd Instr in a Pluralistic Society	6	60
Psy 254	Life Span Human Development	4	0
Ed 494	Laboratory Experience Elementary	16	600
Ed 490	Special Topics in Education	4	

Additional courses required for an Early Childhood teaching license

<u>Course Number</u>	<u>Title</u>	<u>credits</u>	<u>Field Study hours</u>
Ed 1902	Introduction to Education in America	4	30
Ed 1903	Culture of Childhood and Youth	4	30
Ed 3905	Math, Sci, Soc St and Tech Literacy	8	60
Ed 3906	Lang, Art, Mus and Movmnt Literacy	6	60
Psy 254	Life Span Human Development	4	0
Ed 456	Early Childhood Adm and Par. Rel.	3	0
Ed 353	Growth and Dev. Of the Young Child	2	0
Ed 494	Lab Exp and Sem in Elem School	16	600

**Course descriptions**

Ed 1902 Introduction to Education in America. An in-depth study of the history, role and governance of education in the United States. The role of schools in our society and the role of society in our schools. Consideration is focused on preschool through high school and includes funding and governance of the school system. This course will be of interest not only to future teachers but future parents and citizens in general. (4 credits, 30 hours of field study)

Note: The intent is to develop this course into a general education course including the contents of the previous 307, 308, and 309. The course will include information on and activities for admission to the Teacher Education Program.

Ed 1903 Culture of Childhood and Youth. This course examines the experience of children and youth in America in the 21st Century and in American Schools. In particular, the course will explore the behaviors, beliefs and influences of childhood and adolescence as young people mature into adulthood. Of prime importance are influences such as health care, nutrition, infectious disease, substance abuse, family influence, educational opportunity, social and ethnic status, juvenile justice, popular culture and access to technology. (4 credits, 30 hours of field study)

Note: The intent is to develop this course into a general education course including some of the content of the old 307, 308, 309 and some of 334. The course will include current events, multiple age experiences, and ethnic, socioeconomic, and gender foci.

Ed 353 Growth & Development of the Young Child. A critical study of the whole child (the physical, emotional, cognitive, and social development) conception through early childhood. A special emphasis is placed on analyzing developmental stages as they relate to children in the school setting. Offered on demand. (2 credits)

Ed 3904 Individualized Instruction in a Pluralistic Society. This course prepares students for teaching in America's ever-increasing pluralistic society. Special emphasis is placed upon learning to honor, understand, and celebrate gender, ethnic, linguistic, socioeconomic, physical, intellectual, and emotional differences among students. In addition, students of teaching will examine theory and practice teaching methods that have proven successful in educating students from diverse settings with unique needs. For example, students of teaching will learn to use Total Physical Response methods and to employ a combination of media to enhance students' understanding and use of print. Apprentice teachers will learn to expand their effectiveness through the study of classroom management techniques that focus upon using interpersonal relationships and group dynamics. Care will be taken to develop a shared responsibility among prospective teachers for meeting the individual student's needs. Special emphasis will be placed upon the diverse populations of the southwest. (6 credits 60 hours of field study)

Note: This course includes the content from previous 324/325, 440/441, 331 and some of 334.

Ed 3905 Math, Science, Social Studies and Technology Literacy. An in-depth look at the application of math, science, social studies and technology in a school setting. Students will plan, implement, and assess mathematics, science and social studies lessons in a local elementary school and reflect on their lessons in order to identify strengths and weaknesses. A variety of technological resources will be used to supplement and improve teaching and learning. Thirty hours of practicum are included with this course. (8 credits, 60 hours of field study)

Note: Replaces Ed 410, 412, and 415 (math, science and social studies methods), as well as TIE (Technology in Education) modules.

Ed 3906 Language, Arts, Music and Movement Literacy. This course will examine the use of multiple intelligence as a means to employ pedagogical objectives across several disciplines. Students will examine the integration of literacy skills with music, art and movement. Literacy in the content areas of social studies, math and science will be accompanied by specific methodology that incorporates an interdisciplinary focus. Specific attention will be given to methods of teaching reading. (4 credits, 30 hours of field study)

Note: Replaces Ed 357, 361, ES 370, Art 273, Mu 316 (methods of language arts, reading, music and art) some social studies, math, and science methods as they are used interdisciplinarily. This course may be a likely place for beginning the pre-student teaching portfolio.

Ed 456 Early Child Administration/Parent, Community Relations. An analysis and evaluation of current educational programs for young children as well as emphasis on development of skills to develop programs commensurate with the needs of children, curriculum, staffing, nutrition, administration and more. This course also explores the important and complex roles of parents in the educational development of young children. This course assists prospective teachers in developing skills to aid parents in guiding their children. Community resources and services are included. Offered on demand. Prerequisites: Admission to the Teacher Education Program and should be taken the semester prior to student teaching or consent of instructor. (3 credits)

Ed 494 Laboratory Experience Elementary. Full-time student teaching in a public school. Twelve credit hours of student teaching and four credit hours of seminar. The seminar includes an ethnography of the school, including a teacher interview. Students will write an educational autobiography. Portfolios will be discussed. Small groups will meet to work on unit plans and lesson plans. The seminar will meet three weeks at the beginning of the term and three weeks at the end. (16 credits, 600 hours of field study)

Psy 254 Life Span Human Development. The course applies psychological principles to human perspectives of development. The first portion of the course is devoted to studying principles, processes, theories and research methodology. The second part applies these concepts to each stage of the human life span from conception through death and dying, with emphasis on child, preadolescent and adolescent development. (4 credits)

**Attachment C**

**Enrollment Projections**

		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Full Implementation</b>
1-a	In-State Headcount	25	26	27	28	29	30
1-b	Out-of State Headcount	5	5	5	5	5	5
2	Program Headcount	30	31	32	33	34	35
3-a	In-State FTE	25	26	27	28	29	30
3-b	Out-of-State FTE	5	5	5	5	5	5
4	Program FTE	30	31	32	33	34	35
5	Program Graduates	28	29	30	31	32	33

. Enrollment Projections - Incremental Increase

		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Full Implementation</b>
1-a	In-State Headcount	8	9	10	11	12	13
1-b	Out-of State Headcount	2	2	2	2	2	2
2	Program Headcount	10	11	12	13	14	15
3-a	In-State FTE	8	9	10	11	12	13
3-b	Out-of-State FTE	2	2	2	2	2	2
4	Program FTE	10	11	12	13	14	15

**Attachment D**

**Projected Expenses and Revenue Estimates**

		<b>Estimated Amount in Dollars</b>				
		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>Operating Expenses:</b>						
1	Faculty	70,040	73,542	77,044	80,546	84,048
2	Financial Aid specific to program	0	0	0	0	0
3	Instructional Materials	2,500	2,750	3,025	3,328	3,660
4	Program Administration	7,782	8,171	8,560	8,950	9,339
5	Rent/Lease	0	0	0	0	0
6	Other Operating Costs	0	0	0	0	0
7	<b>Total Operating Expenses</b>	<b>80,322</b>	<b>84,463</b>	<b>88,629</b>	<b>92,823</b>	<b>97,047</b>
<b>Program Start-up Expenses</b>						
8	Capital Construction	0	0	0	0	0
9	Equipment Acquisitions	0	0	0	0	0
10	Library Acquisitions	0	0	0	0	0
11	<b>Total Program Start-up Expense</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL PROGRAM EXPENSES</b>		<b>80,322</b>	<b>84,463</b>	<b>88,629</b>	<b>92,823</b>	<b>97,047</b>
		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>Enrollment Revenue</b>						
12	General Fund: State Support	22,365	32,889	34,205	35,520	36,836
13	Cash Revenue: Tuition	56,937	58,613	60,289	61,965	63,641
14	Cash Revenue: Fees	0	0	0	0	0
<b>Other Revenue</b>						
15	Federal Grants	0	0	0	0	0
16	Corporate Grants/Donations	0	0	0	0	0
17	Other Fund Sources	0	0	0	0	0
18	Institutional Reallocations	0	0	0	0	0
<b>TOTAL PROGRAM REVENUE</b>		<b>79,301</b>	<b>91,502</b>	<b>94,494</b>	<b>97,485</b>	<b>100,477</b>

**TOPIC:                    PROPOSAL TO OFFER A BACHELOR OF ARTS IN  
INTERDISCIPLINARY STUDIES/LIBERAL ARTS AT ADAMS  
STATE COLLEGE**

**PREPARED BY:        SHARON SAMSON/DIANE LINDNER**

**I.        SUMMARY**

The Trustees of The State Colleges in Colorado request Commission approval to offer a Bachelor of Arts (B.A.) degree in Interdisciplinary Studies/Liberal Arts at Adams State College (ASC). The proposal originated from the state's adoption of a performance-based teacher education model. ASC has changed everything in the past year – general education, content curriculum, professional knowledge, field experience and assessment plan -- to take advantage of the unique opportunity to make teacher education relevant, interesting, and high quality. ASC has been selected to deliver this degree program to three community colleges under the REAP program.

ASC designed the curriculum of the Interdisciplinary Studies/Liberal Arts degree to provide foundation knowledge in general education, a structured interdisciplinary major of English, History, Science, and Mathematics, and professional knowledge courses. But its defining characteristic is that it is field intensive. The college faculty are role modeling the performance-based model – providing essential content, assessing student performance, and modifying the curriculum to meet individual student needs.

The analysis of the proposed degree identified several strengths, including:

- Strong academic leadership by the vice-president – teacher education involves the whole institution.
- Central involvement of students in redesigning the curriculum.
- Integration of technology – all classes in this major incorporate technology.
- Identified proficiency levels at each year in the degree program – students who are not assessed at the appropriate proficiency level cannot proceed into the next level.
- Faculty hiring and promotion. Both the dean of arts and science and the dean of education are new hires and come with a performance-based background, i.e., formerly taught in a performance-based institution. New faculty are being recruited that support a performance-based model.
- Commitment to break the pattern of under-prepared students. ASC is developing a comprehensive basic skills assessment, coupling it with a sophomore exam, and providing students with immersion courses at both assessment points to ensure that they are well-prepared.

CCHE staff recommend approving the request for a B.A. in Interdisciplinary Studies/Liberal Arts at Adams State College and granting Elementary Education teacher authorization. If the Commission approves this recommendation, ASC may confer a diploma entitled,

*Interdisciplinary Studies/Liberal Arts or Liberal Arts with a Minor in Elementary Education.*

## **II. BACKGROUND**

The following section is summarized from the Adams State College Bachelor of Arts in Interdisciplinary Studies/Liberal Arts proposal. The Trustees of The State Colleges approved the proposed degree at its meeting of February 2000.

Adams State College is a four-year liberal arts college that provides teacher preparation at the undergraduate and graduate level. In 1998-99, Adams State College recommended 56 teacher education candidates for Elementary Education licensure.

Adams State College proposes an Interdisciplinary Studies Major for Elementary Licensure Candidates. The major consists of a common set of liberal arts courses and an emphasis in a content area that is one of the primary content standards for the elementary school curriculum. While this major best fits the needs of candidates enrolled in elementary education licensure programs, other students might find this major beneficial. The liberal arts core will provide a solid preparation in humanities, social sciences, science and mathematics and reading, writing and communication. The content area emphasis will address the depth as well as breadth needed for an interdisciplinary major. Licensure candidates will also complete general education requirements and a licensure sequence of courses and field experiences. With approval by the appropriate academic dean, non-licensure students may enroll in this major.

The proposed interdisciplinary studies major is designed to provide elementary education licensure candidates with a program that will prepare them to be effective teachers in the elementary classroom. This interdisciplinary studies major is aligned with current standards for teacher education in the state of Colorado. The curriculum and field experiences in the licensure sequence are designed to foster knowledge and performance in the following areas: curriculum development and instruction; child development and learning; classroom environment and assessment. Topics of diversity, technology and literacy will be strands throughout the curriculum. Drawing from the 1987 Carnegie Foundation Report, *College: The Undergraduate Experience*, the late Ernest L. Boyer (in *Connectedness through Liberal Education*), identified five essential priorities for undergraduate education. The interdisciplinary studies major addresses these: proficiency in written and spoken word; liberal education, acquisition of moral and ethical principles; active learning; and connections between theory and practice.

Elementary education licensure candidates at Adams State College will demonstrate their abilities with respect to the following program goals. These goals are based on the performance standards mandated by CCHE in its Teacher Education Policy.

- The candidate will demonstrate their knowledge about student literacy development in

reading, writing, speaking, viewing, and listening.

- The candidate will demonstrate knowledge about mathematics and the instruction of mathematics.
- The elementary licensure candidate will demonstrate their knowledge about strategies, planning practices and assessment techniques to ensure student learning in standards-based curriculum.
- The elementary licensure candidate will demonstrate their knowledge in the content areas such as civics, economics, geography, history, science, music, visual arts, foreign language and physical education.
- The elementary licensure candidate will demonstrate their knowledge about classroom and instructional management by successfully managing time, communications and records in ways that support and facilitate student learning.
- The elementary licensure candidate will demonstrate the ability to be responsive to the needs and experiences children bring to the classroom, including those based on culture, community, ethnicity, economics, linguistics, and innate learning abilities. The candidate will be knowledgeable about learning exceptionalities and conditions that affect the rate and extent of student learning, and will be able to adapt instruction for all learners.
- The elementary licensure candidate will demonstrate skills in the use of technology to support instruction and enhance student learning.
- The elementary licensure candidate will recognize the school's role in teaching and perpetuating the democratic system, and understand the relationships among the various governmental entities that create laws, rules, regulations, and policies that determine educational practices.

CCHE policy does not support a major in elementary education. Yet candidates seeking a license in elementary education are required by law to have an academic major. There are several problems with using traditional majors such as biology, history, or sociology. First, the majors at ASC are large, ranging from 36 to more than 60 semester hours. Add the requirements of the smallest major to 44 semester hours of general education (currently), 12 hours of licensure prerequisites, 50 hours in the licensure sequence itself, and the total of 142 exceeds the CCHE prescribed 120 semester hours. A second problem with existing majors is that they offer disciplinary depth at the expense of a strong background in the liberal arts. Elementary teachers teach all subjects and must have a broad knowledge base grounded in the various arts and sciences. An interdisciplinary studies major supports the breadth of content knowledge needed by elementary teachers better than the single discipline degrees.

During the 1998-99 academic year the Department of Teacher Education at ASC participated in the Program Review for their current Selected Studies major. Identified, as weaknesses were lack of early and on-going field experiences, curriculum fit, and technology. The following information is summarized and taken from that Program Review.

Candidates should have access to the latest and most up-to-date technology and materials in the field of education. The current ASC classrooms are not equipped to allow for faculty demonstration of or student use of technology. No education classes are currently scheduled in the rooms equipped with technology because of scheduling and resource issues. Faculty may have access to limited numbers of "smart carts" equipped with computers and projectors; however, this is dependent on scheduling. This is also a consideration in field placement as we have candidates going into classrooms in which teachers may or may not be using current technology and materials. Technology is a strand in each of the licensure courses in the proposed interdisciplinary studies curriculum. Each course will have a specific technology application objective; this will ensure candidates have a variety of skills and demonstrated uses before student teaching and reduce redundancy in courses. Multiple smart classrooms are being planned and funding for these is being sought. The term "smart" classroom refers to classrooms that are equipped with current technology such as computer/video equipment that would facilitate instruction using such techniques as presentations with PowerPoint, interactive video links with area public schools, and teacher/student interaction via internet.

While early and on-going field experiences were a key factor in the redesign, attention to ensure quality placements and supervision to candidates in the field was also included. Faculty recognize that quantity is not a substitute for quality. Criteria for selection for mentor teachers is being given careful consideration. Input from a team of public school personnel has been gathered. As courses are redesigned the inclusion of instruction in theory and application of teaching reading and writing is being carefully considered.

The new interdisciplinary studies major will replace the Selected Studies Major. Candidates may be more likely to choose the interdisciplinary studies major than the Selected Studies Major because of its increased relevance to the elementary classroom content and that a student may complete the program in four years.

Representatives from Adams State College attend the monthly BOCES meetings and seek input from the San Luis Valley Superintendents. Key areas for them were more reading and writing, standards, assessment and technology. The new interdisciplinary studies major and licensure sequence is supported by our superintendents and was designed with their input.

In the Spring Semester 2000, a task force chaired by Dr. David Svaldi, Vice President for Academic Affairs met regularly. Sub-committees of this group had public school representation. Also, the Dean and Associate Dean of the School of Education and Graduate Studies are meeting with this group for open dialogue about their market needs. The Dean of the School of Mathematics, Science and Technology has begun regular visits and dialogue with the area public schools.

### **III. STAFF ANALYSIS**

Because ASC requested both degree approval and Elementary Education teacher authorization, the analysis is separated into two parts.

**Part I: Analysis of the Degree Program.** In reviewing the concept paper and program proposal, the staff considered role and mission, duplication, program need and demand, and quality issues such as curriculum and resources to meet the teacher education performance measures. Both the concept paper and full proposal were submitted to the other governing boards for peer review.

#### **Role and Mission**

The role and mission of Adams State College is “a general baccalaureate institution with moderately selective admission standards” to “provide a limited number of professional programs, educational programs, and traditional arts and sciences” (C.R.S. 23-56-101).

Adams State College was founded in 1921 as the State Normal School at Alamosa. When it officially opened in 1925, its major focus was teacher preparation. Seventy-five years later, almost two-thirds of students at ASC are pursuing teacher licensure. Approximately two-thirds of teachers in local schools are ASC graduates.

The proposed interdisciplinary studies major is consistent with both the general baccalaureate and teacher education portion of the mission statement. CCHE Teacher Education Policy stated that teacher education was a whole institution responsibility.

The development of the proposed interdisciplinary major had campus wide involvement. Dr. David Svaldi, Academic Vice President, chaired a task force that met regularly during the spring semester to design new teacher education programs. Serving on the curriculum committee were Academic Deans for Business, Arts and Letters, Science, Math and Technology, Extended Studies, Education and chairs of Music, History/Government, Science, and Teacher Education. ASC appointed a new dean of Arts and Science and a new dean of Education.

#### **Program Need and Demand**

A national study, a Colorado Department of Education study, and a student survey support the program need. Data collected by the American Association for Employment in Education identified 11 regions with the highest teacher shortages. Of the 11 regions, Adams State College serves the top four regions (Northwest, West, Rocky Mountain and Great Plains/Midwest). The U.S. Department of Labor statistics projects a 20 percent increase in demand for Elementary Education teachers by 2006. If approved, the first class of ASC’s Interdisciplinary Degree program graduates will enter the teaching market in 2006.

The Colorado State Board of Education surveyed school districts to find out what degree programs were highly regarded by administrators and curriculum supervisors. The school districts indicated that the preferred degree for elementary classroom teachers is a degree program that spans the four content areas of language arts, mathematics, social studies, and science and has remained consistent over the last three years (William J. Maloney, *Educator Preparation in Colorado, 1997-1999*). Formerly, Adams State attempted to meet this demand through its Selected Studies major. The Interdisciplinary Degree will replace the Selected Studies degree.

The results of a teacher preparation survey confirmed that students pursuing elementary education licensure are interested in an interdisciplinary major (86%). The three demand studies indicate that the enrollment projections (Attachment A) are realistic and attainable.

### **Program Quality and Resources**

CCHE staff rely on active governing board involvement in evaluating the quality of the program, the capacity of the institution to offer the degree, and cost-effectiveness of offering the degree. The Trustees of The State Colleges have reviewed these criteria in depth and conclude that the proposed program adequately addresses quality, capacity, and cost-effectiveness were adequately addressed. No additional faculty or space will be required to teach or administer the program (Attachment B).

As compelling is the information received in interviews with administrators from the 14 surrounding school districts. Adams State circulated the program design to this group and the administrators suggested raising requirements in several areas to ensure that all graduates have the opportunity to become high quality teachers. Adams incorporated the input into the program design.

Among the recommendations from the Program Review Team was a re-design to incorporate quality field placements and early entry to Professional Education Program, along with strategies to address areas of weaknesses. A committee was formed to re-design the current curriculum and program as a whole. This group submitted a concept and skeletal draft to faculty, which was approved. The proposed program emphasizes early entry into the program, early and on-going field experiences and includes courses in teaching reading and writing in the elementary school. A full-time tenure track position in the area of reading was approved and is scheduled to be filled by the fall semester of 2000. Several of our local school districts have excellent, research-based reading programs and quality trained teachers serving in those programs. Our candidates could greatly benefit from their classroom expertise. Therefore, a teacher in residence will be sought that can assist with reading methods instruction.

### **Part II: Analysis of Teacher Education Performance Criteria.**

This section of the analysis is based on the materials submitted in the proposal and the findings of the teacher education site review. In its analysis of teacher education proposals, the Commission's primary concern centers on the quality of the program and evidence that it will prepare quality teachers. CCHE examines the proposal for evidence of quality in three critical aspects of the program design – (1) content, (2) assessment, and (3) field experience.

### **Content**

CCHE's Teacher Education Policy defines a quality teacher education preparation program as one characterized by a strong general education curriculum, coupled with a strong arts and science major. The former provides scope, the latter dept of knowledge.

A student enrolled in the Interdisciplinary Studies, B.A. degree program is required to complete 120 credit hours. ASC has adopted a new curriculum design that builds upon a general education curriculum of 2 writing courses, 1 mathematics course, 3 lab-based science courses, 2 history courses, 2 humanities courses. The major requires the student to complete five pre-determined courses in mathematics, geography, history, health, and fine arts. The remaining courses are drawn from a selected pool of courses in mathematics, social studies, language arts, and science. These content courses are predominantly upper division.

Adams State reduced the professional knowledge course work and increased the field experience credits. In the field experience, the students are in the K-12 classroom and are provided "structured, supervised experiences that allow students to apply knowledge and receive immediate feedback."

In comparison to the Selected Studies major that the proposed Interdisciplinary Degree is replacing, students have no elective credit choices. Degree and the number of credit hours required for graduation decreased from 146 to 120. Interestingly, both students and local school administrators perceive the new curriculum with fewer credit hours as stronger.

**Table 1: Curriculum Design of the Interdisciplinary Studies Degree**

<b>Curriculum</b>	<b>Credit Hours</b>
General Education	<b>40</b>
Content Major	<b>30</b>
Geography	3
American History	3
Mathematics	3
Fine Arts (Literature, Music, Art)	3
Health	3

---

Emphasis in English, Math, Science, Social Studies	15
Professional Knowledge	<b>13</b>
Field Experience	<b>35</b>
Electives	2
Total Credits	<b>120</b>

---

The courses in the interdisciplinary studies major are designed to enhance the candidate's knowledge of subjects that elementary school teachers must teach. Courses in the new major may not be used to meet general education requirements. At minimum, every teacher candidate will have at least two courses in writing, two courses in college-level mathematics, three courses in history, three courses in science, one course in geography, one course in art, music, and literature, and one course in health focusing on nutrition, first aid, recognition of child abuse and drug abuse, wellness, coping with threats of violence, and related issues. While designed to cover essential health skills for teachers, this course is required of all interdisciplinary studies majors. It meets the standards set forth in the school safety aspect of the Colorado report cards for public schools.

CCHE and CDE staff concur that the content of the Interdisciplinary Studies major provides appropriate content knowledge for Elementary Education teachers.

### **Assessment**

CCHE adopted assessment criterion defines a quality teacher education preparation as one that provides strong assessment of student knowledge. Quality assessment encompasses three areas: (1) Information -- assessment of subject matter, (2) Integration -- assessment of knowledge of Colorado K-12 content standards, and (3) Application -- site-based assessment of teaching skills.

Information -- Candidate's knowledge gained from a comprehensive general education program and knowledge gained disciplinary preparation in subjects that will be taught in the classroom. The new design will assess basic skills using grades in English 101, 102 and the general education math course. Candidates will be required to take the Content Place Exam before student teaching begins. Because the curriculum revision includes field experiences in earlier and multiple courses, assessments will be designed to document a candidate's progress and growth in the program. Content knowledge, understanding and application items will be included on the instrument.

- 1) Since Colorado has adopted a performance-based teacher education model, it is essential that every approved teacher education program provide assessment data on

the content knowledge of prospective teachers. ASC built its assessment plan from the ground up. Recognizing that many graduates of the valley come to college with academic deficiencies, it committed to breaking the pattern of under-preparedness. It will assess all incoming students in reading, writing, mathematics, and science. The National Science Foundation is funding the development of remedial science courses.

Students are also assessed at the end of the sophomore year with the Academic Profile. Like the basic skills assessment, if a student does not demonstrate proficiency, ASC will provide intensive immersion courses to rectify the performance level before the student receives junior standing.

- 2) Integration – Candidate’s knowledge of elementary content standards and teaching skills.

The PLACE content examination for Elementary Education measures the candidate's knowledge of K-12 content standards. The real assessment will occur in the field. Adams State College’s Interdisciplinary Major is designed to be standards-based. In order to assess proficiency in the standards and standard elements, teacher candidates are expected to demonstrate those proficiencies in field settings. Faculty and master teachers document evidence of gains in student academic performance levels, provide focused support to understand experiences in the context of student learning, and model assessment practices. The reports assess proficiency and proficiency gains in each of the standards and standard elements using the following:

Level 1 Basic. The teacher candidate is introduced to the standard/standard element and demonstrates a basic level of knowledge and understanding. The teacher candidate has not yet had the opportunity to apply the standard/standard element in a college classroom or field setting.

Level 2 Developing. The teacher candidate demonstrates an increasing knowledge and understanding of the standard/standard element. The teacher candidate is able to begin demonstrating, with assistance, the standard/standard element in a field setting or college classroom, and to evaluate, with assistance, the success of the teaching performance.

Level 3 Proficient. The teacher candidate demonstrates substantial knowledge and understanding of the standard/standard element. The teacher candidate demonstrates the ability to apply the standard/standard element in a field setting, and to assess student learning and evaluate teacher performance. This is the level of well-prepared first year teachers.

Level 4 Advanced. The teacher candidate demonstrates comprehensive knowledge and understanding of the standard/standard element; can consistently apply the

standard/standard element in a field setting; can skillfully integrate it into an overall lesson; and critically evaluate student learning and teaching effectiveness in order to guide subsequent instruction.

The proposed assessment of field experience responds to the survey of former ASC graduates who recommended specific and clear feedback on the development of skills.

### **Field Experience.**

In CCHE's Teacher Education Policy, the field experience criterion defines a quality teacher education preparation as characterized by substantial clinical training that occurs under the direct supervision of expert teachers. It is measured both quantitatively, i.e., a minimum of 800 hours that begins early in the academic program, and qualitatively, i.e., the focus, scope and intensity of the field experience.

ASC survey of its teacher education graduates supported the assumptions of CCHE's Teacher Education Policy that emphasized the need for intensive field experiences. The greatest area of concern voiced by former students was the lack of field experiences before student teaching. In order for candidates to become effective classroom teachers, the students recommended early, 1) structured field experiences, 2) experiences at different K-12 grade levels, and 3) immediate and frequent feedback.

ASC approached the design of the field experiences in a slightly different way than other institutions. Rather than organizing the field experience around the level of student-teacher interaction -- one-on-one instruction, small group, large group, classroom, and full school, ASC designed its field experiences around the role and responsibilities of an elementary classroom teacher. Over a three-year period the student will have a minimum of:

- 10 hours working with special need populations (i.e., special education students in the general classroom and self-contained special education classroom).
- 30 hours in parent and community relations, including participating in parent teacher conferences, professional development activities of a school district, school district meetings.
- 10 hours of supervised experiences dealing with health and safety issues, including disciplinary meetings with students and assessment activities that assist in early identification of children with social problems.
- 20 hours of classroom management.
- 40 hours of literacy experience, that span two semesters.
- 40 hours of guided, supervised curriculum development.
- 40 hours of guided, supervised assessment development, administration and

interpretation of assessment results.

- 640 hours of full-time teaching in an assigned classroom.

The field experience requirements are supplemented with 50 hours of pre-professional observation in selected classrooms. One of the strengths of ASC field experience is that it is one of the few programs that has specified the criteria for selecting K-12 “master” teachers and clearly defined the expected scope and intensity experiences needed for a student to demonstrate mastery of knowledge and skills.

ASC’s Elementary Education field experience meets the statutory requirement of 800 hours and CCHE’s policy criteria of focus, scope and intensity.

#### IV. **STAFF RECOMMENDATION**

**That the Commission approve the request of the Trustees of The State Colleges of Colorado to offer a Bachelor of Arts in *Interdisciplinary Studies/Liberal Arts* at Adams State College and granting the degree Elementary Education teacher authorization.**

**TOPIC:                    PROPOSAL TO OFFER A BACHELOR OF APPLIED TECHNOLOGY (BAT) AND A BACHELOR OF APPLIED SCIENCE (BAS) AT THE UNIVERSITY OF NORTHERN COLORADO**

**PREPARED BY:        WILLIAM G. KUEPPER/JOANN EVANS**

**I.        SUMMARY**

The Trustees of the University of Northern Colorado (UNC) request Commission approval to offer a Bachelor of Applied Technology (B.A.T.) and a Bachelor of Applied Science (B.A.S.) degrees. These degree programs are presented together for Commission consideration because they are identical in concept and purpose. They are unique and new to Colorado and were specifically designed to meet the market demand of business and industry.

The degrees are described as “transfer only” in that students cannot enroll at UNC for all four years of these programs. They must have completed an Associate of Applied Science (AAS) or an Associate of Applied Arts (AAA) degree to be admitted. This is a unique requirement of the program.

The Bachelor of Applied Technology (BAT) with a major in Technology and Human Resource Management is designed to provide junior/senior level baccalaureate degree options designed for students who are graduates of Associate of Applied Science (AAS) in technology. The BAT expands their technology skills and addresses human resource needs to provide a foundation for the management in various small businesses and entities such as banking, real estate, state agencies, and technology firms. Graduates of the BAT will be prepared in the business and general education courses necessary for advancement in their career fields.

The Bachelor of Applied Science (BAS) with a major in Allied Health is designed to provide junior/senior level baccalaureate degree options designed for students who hold an AAS degree in the allied health professions. The BAS is intended to meet the needs of the students coming from health related backgrounds. The degree will prepare them for employment in various health care agencies including but not limited to, hospitals, clinics, insurance agencies, rehabilitation centers, long-term care facilities, and rural care facilities.

No issues were associated with the proposed degree programs, regarding role and mission, program need, and duplication. On December 15, 2000, the Trustees of the University of Northern Colorado approved these degree programs “ensuring that issues related to quality, capacity, and cost-effectiveness are adequately addressed.” Commission staff support these degree programs based on (1) their unique design to provide baccalaureate degree opportunities to underserved populations, and (2) to help provide an educated workforce in high demand areas.

CCHE staff recommend approval of the request for the Bachelor of Applied Technology (BAT) and the Bachelor of Applied Science (BAS) to be offered by the University of Northern Colorado.

## **II. BACKGROUND**

The Commission considered the concept papers on April 6, 2000, and raised several issues to be addressed in the full proposals. The Trustees of the University of Northern Colorado approved the proposed degrees at its meeting of December 15, 2000. The degree proposals were submitted to the Commission staff October 24, 2000. Modified versions were subsequently developed based on discussions between Commission and governing board staffs.

The proposals submitted by UNC present the curriculum design and rationale for the new degree programs. UNC believes these degree program offerings will meet the increasing educational needs of the state in addressing the occupational/vocational training for citizens. Both degrees will be offered by the College of Health and Human Sciences and will include course offerings from the Colleges of Arts and Sciences, Education, and the Monfort College of Business. They have been developed in collaboration with, and have the full support of the Community College of Colorado.

These two degree programs will allow students with the Associate of Applied Arts (AAA) or Associate of Applied Science (AAS) degrees from an accredited institution, the opportunity for advancement in their career by pursuing a bachelor's degree uniquely different from the traditional Bachelor of Arts or Bachelor of Science degree. The students will have the opportunity to articulate into programs that lead to a Bachelor of Applied Technology with a major in Technology and Human Resource Management and a Bachelor of Applied Science with a major in Allied Health. The community colleges are important feeder schools to the University of Northern Colorado. Therefore, UNC worked closely with the Community College System in developing these programs.

Both the BAT and BAS degree programs will require completion of 60 semester hours beyond the AAA/AAS degree. Each program will consist of 41 hours of applied discipline related core credit, 12 hours of elective credit with distribution requirements in leadership and management, communication, culture, health care, and planning and evaluation, and 7 hours of credit devoted to an internship/practicum. General education requirements completed as part of the AAA or AAS degree will constitute the general education component for the BAT/BAS degrees. The programs are designed to be completed in two years. Students will enroll in cohort groups in which they will follow an identical schedule throughout the two-year course of study. Some provisions may be made for part-time students.

The BAT will emphasize budget and fiscal management, planning and evaluation, legal and legislative issues, human resource management, oral and written communication, technological applications, and programming. The BAS will emphasize budget and fiscal

management, planning and evaluation, legal and legislative issues, human resource management, oral and written communication, technological applications, health policy, and ethics.

These are pioneer degree programs that will be delivered using distance delivery technology throughout the state using live video.

### **III. STAFF ANALYSIS**

In analyzing the concept papers and the program proposals, Commission staff considered role and mission, program duplication, program need and demand, and quality issues such as curriculum and resources. Both the concept papers and the full proposals were submitted to the other governing boards for peer review. The proposed BAT and BAS carry the endorsement of the Community Colleges of Colorado. (Attachment A)

#### **Role and Mission and Program Duplication**

The proposed degrees are congruent with the mission of the University of Northern Colorado “to develop well-educated citizens and to improve the quality of life in the state and region through teaching, learning, and the advancement of knowledge and community service.” Commission staff sees no role and mission issues with these degree programs. It agrees that the programs are “congruent” with UNC’s mission. Since these would be the first degrees of this type to be offered at a public institution in the state, program duplication is not a concern.

Colorado State University has a four-year Bachelor of Science degree in Technology Education and Training. There are similarities in course offerings between the CSU program and those proposed by UNC. However, differences in admissions requirements, structure of the program, the student clientele for the degree, and the projected employment of the graduates distinguish the proposed programs at UNC from the CSU program.

#### **Program Need and Demand**

UNC has worked closely with the business community in determining the need for graduates of the proposed programs, and with community colleges in ascertaining the potential demand for the programs among community college graduates. The employment opportunities for graduates of the proposed programs appear to be good. The BAT/BAS degrees offer the opportunity for holders of two-year technical degrees to increase their upward mobility into supervisory or management roles. Approximately 2,500 students graduate each year with an AAS from the community colleges in Colorado. So the potential demand for this type of program is substantial.

Commission staff believe that the headcount enrollment projections for both programs, provided in Attachment B, have been developed using appropriate assumptions and appear attainable. Each program is projected to have 20 students the first year with enrollment

increasing to 57 at full implementation. The use of full-time cohort groups in both programs explains why 18 students will graduate in year 2.

### **Program Quality and Resources**

The Commission relies substantially on the governing board to assure the quality of the proposed programs, their cost effectiveness, and the institution's ability to offer them. (Attachment C)

As noted earlier, the two proposed programs are very similar in structure, purpose, and, in the initial majors or specializations, the curricula. The primary distinction between the two lies in the programs followed by the students in earning their AAS or AAA degrees, not in the course work they may take at UNC. Although the state of Colorado does not have any experience with these degree programs, other institutions, i.e., Southern Illinois, have had a great deal of success with this type of program. While the need for two separate degrees might be questioned, the institution suggests that the distinction between the BAS and BAT degree titles is seen as important to the community colleges, potential students, and employers.

The two proposed programs build upon associate degree programs not typically designed or designated as transfer degrees. To assure completion of the degree, UNC will require that each person admitted to either the BAT or BAS program meet with an advisor "to determine any deficiencies that might preclude successful completion of the degree program." Commission staff assumes that with the recently adopted institution-wide assessment plan that any student who has not participated in a sophomore assessment prior to beginning either program would be required to do so at UNC.

The curricular requirements of the two degrees are almost entirely at the upper division level and consist of courses already being offered at the institution. Both of these characteristics help assure the academic rigor of the new programs. The curriculum for each of these two degree majors is attached in Attachment D and E. The faculty of these colleges reflect both scholars and practitioners who are capable of guiding students through academic course work and practical field experiences. The focus of these two degree programs is the integration of occupational/vocational preparation, academic content, and experiential opportunities.

The programs will not require additional classroom space at the institution because courses will be delivered to sites off the campus. UNC has the necessary capability of delivering synchronous video to remote sites, as well as the resources necessary to support faculty to deliver the courses.

Each program is projected to need 2.4 additional faculty at full implementation and these are provided for in the program budget from projected revenue. (Attachment F) The additional faculty can be accommodated in existing office space in the college and no additional space is needed for program administration. The budget contains extra costs associated with delivering the programs to off-campus sites. These include the use of community colleges and employing on-site personnel.

### **Conclusion**

Two important factors distinguish the proposed degree programs from traditional ones and argue for a well-designed and executed plan for assessing learning outcomes and program quality. First, technical degrees constitute the first half of the programs, and second, the BAS and BAT will be offered off campus. Both of these factors mean that some of the more traditional quality control mechanisms are absent. UNC has suggested some of the means it will employ to measure student success and program quality. Because of the non-traditional nature of the structure and delivery of the two programs, Commission staff recommends that UNC provide to the Commission a more complete description of its plans for assessing the program as these plans are developed.

The proposed degree programs, in accepting the AAA and AAS in transfer, provide an important opportunity for further education to holders of these degrees, and have been developed in close cooperation with the community colleges. The programs also are in direct response to workforce needs as expressed by the business community in Colorado.

### **IV. STAFF RECOMMENDATION**

**That the Commission approve the request of the Trustees of the University of Northern Colorado to offer a Bachelor of Applied Technology (BAT) and a Bachelor of Applied Science (BAS) at the University of Northern Colorado, with the understanding that one year after implementation of the degree programs, i.e., at the time of the annual report on newly approved degree programs, a comprehensive plan for the assessment of learning outcomes and program quality be submitted to the Commission.**

Attachment A

## Colorado Community College & Occupational Education System

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ACADEMIC AFFAIRS

Dr. Vicki Downey  
Assistant Vice President of Academic Affairs  
University of Northern Colorado  
501 20<sup>th</sup> Street,  
Greeley, CO 80639

Dear Dr. Downey:

We have read UNC's proposals for the proposed Bachelor of Applied Science (BAS) and the Bachelor of Applied Technology (BAT) degrees. We believe both of these degrees have been needed in Colorado for a long time, as a means for community colleges students who complete the Associate of Applied Science (AAS) degree to further their education without being routed through the traditional baccalaureate path.

CCCOES sees this proposal as strengthening the working relationship between CCCOES, the local district colleges and the University of Northern Colorado to better serve Coloradans. We fully support this proposal and are committed to "pulling out all stops" to make it work. In fact, we consider this approach as the model for future arrangements that involve the AAS/AAA degrees.

CCCOES views this proposal as a joint venture between two-year and four-year institutions that makes efficient use of resources and meets workforce demands while facilitating transfer of students expeditiously.

Sincerely,

Christine Johnson, Ph.D.  
Vice President for Educational Services

Cc: Dr. Sam Dosumu, Director of Instruction

Attachment B1

**TABLE 1 - ENROLLMENT PROJECTIONS**

Name of Program: Bachelor of applied Technology

Name of Institution: University of Northern Colorado

**DEFINITIONS:**

Academic year is the period beginning July 1 and concluding June 30.

Headcount projections represent an unduplicated count of those students majoring in the program, regardless of the classes enrolled, during the academic year.

FTE is defined as the full-time equivalent number of those students majoring in the program, regardless of the classes enrolled, during the academic year.

Program graduate is defined as a student who finishes all academic program requirements and graduates with a formal award within a particular academic year.

**SPECIAL NOTES:**

To calculate the annual headcount enrollment, add new enrollees to the previous year headcount and subtract the number who graduated in the preceding year. Adjust by the anticipated attrition rate.

To calculate FTE, multiply the number of students by the projected number of credit hours students will be typically enrolled in per year and divide by 30.

The data in each column is the annual unduplicated number of declared program majors. Since this table documents program demand, course enrollments are not relevant and shall not be included in the headcount or FTE data.

		Year 1	Year 2	Year 3	Year 4	Year 5	Full Implementation
1-a	In-State Headcount	18	32	39	45	45	47
1-b	Out-of-State Headcount	2	4	7	9	9	10
2	Program Headcount	20	36	46	54	54	57
3-a	In-State FTE	18	32	39	45	45	47
3-b	Out-of-State FTE	2	4	7	9	9	10
4	Program FTE	20	36	46	54	54	57
5	Program Graduates	0	16	16	24	24	25

### TABLE 3 – ENROLLMENT PROJECTIONS

Name of Program: Bachelor of Applied Science

Name of Institution: University of Northern Colorado

**DEFINITIONS:**

Academic year is the period beginning July 1 and concluding June 30.

Headcount projections represent an unduplicated count of those students majoring in the program, regardless of the classes enrolled, during the academic year.

FTE is defined as the full-time equivalent number of those students majoring in the program, regardless of the classes enrolled, during the academic year.

Program graduate is defined as a student who finishes all academic program requirements and graduates with a formal award within a particular academic year.

**SPECIAL NOTES:**

To calculate the annual headcount enrollment, add new enrollees to the previous year headcount and subtract the number who graduated in the preceding year. Adjust by the anticipated attrition rate.

To calculate FTE, multiply the number of students by the projected number of credit hours students will be typically enrolled in per year and divide by 30.

The data in each column is the annual unduplicated number of declared program majors. Since this table documents program demand, course enrollments are not relevant and shall not be included in the headcount or FTE data.

		Year 1	Year 2	Year 3	Year 4	Year 5	Full Implementation
1-a	In-State Headcount	18	32	39	45	45	47
1-b	Out-of-State Headcount	2	4	7	9	9	10
2	Program Headcount	20	36	46	54	54	57
3-a	In-State FTE	18	32	39	45	45	47
3-b	Out-of-State FTE	2	4	7	9	9	10
4	Program FTE	20	36	46	54	54	57
5	Program Graduates	0	16	16	24	24	25

**University of Northern Colorado**

**Board of Trustees**

**December 15, 2000**

**Item:** New Degree Proposals- Bachelor Degree of Applied Science  
Bachelor Degree of Applied Technology

**Submitted by:** Dr. Marlene Strathe

**Summary of Degree Programs:**

The Bachelor Degree of Applied Science (BAS) and the Bachelor Degree of Applied Technology (BAT) are two new 60-hour degree completion programs at UNC and in the State of Colorado. Students will be admitted after completion of an applied degree (AAA or AAS) at a community college. The BAS degree focuses on management and human resource issues in applied health while the BAT focuses on similar professional development in small business, government agencies, and the technology and related industries.

**Administrative Recommendation:** Approve the proposals for the Bachelor of Applied Science and the Bachelor of Applied Technology.

---

**Signature of the Provost and Vice President of Academic Affairs**

**The Board of Trustees Action:** Approved Did Not Approve No Action Taken  
Date: December 15, 2000

Attachment C

4.02.03

**Analysis of Program Quality:**

The degree programs proposed incorporate an array of courses that prepare a student to enter employment with a set of very functional skills. The BAT/BAS degree programs were designed to provide an opportunity for highly skilled professionals to obtain management or professional skills not included as a part of an Applied Associate of Arts degree. Students will begin the degree program with excellent vocational and applied knowledge. Regular faculty, who are part of three Colleges at UNC, will deliver the courses. Courses were selected from requirements of other degree programs and will provide a strong addition to the AAS or AAA degree previously earned by these students.

The program goals, content faculty, and delivery strategies are consistent with the standards set for other degree programs at UNC. Further, these degree programs will enhance UNC's ability to deliver needed instruction to rural areas.

**Analysis of Institutional Capacity to Offer the Program:**

The courses included in the BAS/BAT degree programs are existing courses at UNC. Each degree program requires 60 hours, 17 of which are common hours required in both programs. Current enrollment in these courses is high, although there are seats available in nearly every section each time they are offered. As UNC begins to offer the coursework for these degree programs, the intent is to concurrently enroll students in the on an off campus sections. The faculty member will teach primarily on campus and the course will be telecommunicated to community college sites throughout the state. Students will travel only to the local community college for each course. Students living in the Greeley area can take the courses on campus. There is no plan to telecommunicate the coursework to Aims Community College.

Given the delivery model chosen for these degrees programs, we are satisfied that there is sufficient capacity to deliver the coursework outlined in the proposal. With a modest increase in faculty the University has the resources and space to deliver the programs to 40 or more students the first year with more students enrolling in subsequent years. Courses are not concentrated in one College and, thus, the responsibility is disbursed across three Colleges.

**Analysis of Enrollment and Costs:**

All revenues and expenses were calculated using 20 students in each program years 1 and 2, 30 students years 3 and 4, and 35 students years 5 and after. Revenues reflect small non-resident enrollments. Students will primarily be from Colorado. The enrollments were projected after discussions with representatives of the Community College system in Colorado. All indications are that these will be high demand programs with excellent enrollments. Many inquiries have already been received concerning the programs.

Attachment C

The full cost of program delivery was included in the proposal tables. Those costs were not reduced by the efficiency created by concurrently delivering the course to on- and off-campus students. Given the nature of some courses, it may be necessary to deliver a dedicated section for the BAT/BAS students; however, the majority of the courses will be concurrently delivered.

Distance delivery costs are relatively low when compared to the cost of faculty to deliver a course for students enrolled only in these degree programs. A strength of the proposal is the cost containment achieved by concurrent delivery using technology. The program is supported as described in the program plan.

**Required Degree Courses (41 credits) for Applied Technology**

PSY 366 Industrial Psychology (3 credits)  
HRS 480 Human Service Helping Skills (3 credits)  
GERO 465 Management Concepts in Human Services (3 credits)  
PHIL 305 Ethics and Theory and Practice in the Workplace (3 credits)  
PHIL 101 Critical Thinking and Writing (3 credits)  
BA 205 Business Communications (3 credits)  
BAMG 350 Management of Organizations (3 credits)  
BAMG 354 Organizational Behavior (3 credits)  
HHS 431 Infomatics for Health Care (2 credits)  
BACS 300 Information Systems (3 credits)  
BACS 395 Production Management (3 credits)  
ET 425 Computer Applications (3 credits)  
SPCO 431 Communication and Leadership (3 credits)  
SPCO 323 Intercultural Communication (3 credits)

**Electives (12 credits)**

BAAC 220 Principles of Accounting (3 credits)  
SPCO 330 Small Group Communication (3 credits)  
SPCO 331 Organizational Communication (3 credits)  
BAMG 353 Human Resources Management (3 credits)  
BAMG 457 Managing Complex Organizations (3 credits)  
CH 500 Stress Management (3 credits)

**Internship**

HHS 492 Internship in Health and Human Sciences (7 credits)

**Degree Courses Requirements (41 credits) for Applied Science**

PSY 366 Industrial Psychology (3 credits)  
CH 299 Community Health Systems (3 credits)  
CH 410 Introduction to Program Planning and Evaluation (3 credits)  
CH 405 Health Communications and the Media (3 credits)  
HRS 290 Introduction to Human Rehabilitative Services (3 credits)  
HRS 480 Human Service Helping Skills (3 credits)  
GERO 465 Management Concepts in Human Services (3 credits)  
PHIL 305 Ethics in Theory and Practice (3 credits)  
PHIL 101 Critical Thinking and Writing (3 credits)  
BA 205 Business Communications (3 credits)  
BAMG 350 Management of Organizations (3 credits)  
BAMG 354 Organizational Behavior (3 credits)  
HHS 431 Infomatics for Health Care Professionals (2 credits)  
NURS 318 Health Care Systems (3 credits)

**Electives (12 credits)**

NURS 319 Cultural Issues in Health Care (1 credits)  
BAAC 220 Principles of Accounting (3 credits)  
BAMK 260 Introduction to Marketing (3 credits)  
HRS 495 Special Topics in Human Services (3 credits)  
SPCO 431 Communication and Leadership (3 credits)  
SPCO 323 Intercultural Communication (3 credits)

**Internship**

HHS 492 Internship in Health and Human Sciences (7 credits)

**TABLE 2 – PROJECTED EXPENSE & REVENUE ESTIMATES FOR APPLIED TECHNOLOGY**

**PURPOSE:**

This table documents what the program will cost and how the institution plans to cover the costs. All cost and revenue projections should be in constant dollars. (Do not include an inflation factor.)

		<b>ESTIMATED AMOUNT in DOLLARS</b>				
		<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>
<b>Operating Expenses:</b>						
1	Faculty	\$117,120	\$214,720	\$214,720	\$214,720	\$214,720
2	Financial Aid specific to program					
3	Instructional Materials	1,000	2,000	2,000	2,000	2,000
4	Program Support	24,000	45,600	51,600	56,400	62,400
5	Rent/Lease	2,500	5,000	5,000	5,000	5,000
6	Internship/Other Operating Costs		12,600	12,600	16,100	16,100
7	<b>Total Operating Expenses</b>	<b>\$144,620</b>	<b>\$279,920</b>	<b>\$285,920</b>	<b>\$294,220</b>	<b>\$300,220</b>
<b>Program Start-Up Expenses:</b>						
8	Capital Construction					
9	Equipment Acquisitions					
10	Library Acquisitions					
11	<b>Total Program Start-Up Expenses</b>					
<b>TOTAL PROGRAM EXPENSES</b>			<b>\$279,920</b>	<b>\$285,920</b>	<b>\$294,220</b>	<b>\$300,220</b>
<b>Enrollment Revenue</b>						
12	General Fund: State Support	\$82,800	\$147,200	\$179,400	\$207,000	\$207,000
13	Cash Revenue: Tuition	28,005	51,866	73,154	88,727	88,727
14	Cash Revenue: Fees (40/credit fees)	24,000	45,600	51,600	56,400	62,400
<b>Other Revenue</b>						
15	Federal Grants					
16	Corporate Grants/Donations					
17	Other fund sources *					
18	Institutional Reallocation **					
<b>TOTAL PROGRAM REVENUE</b>		<b>\$134,805</b>	<b>\$244,666</b>	<b>\$304,154</b>	<b>\$352,127</b>	<b>\$358,127</b>

\* If revenues are projected in this line, please attach an explanation of the specific source of the funds.

\*\* Attach an explanation of the amounts reported in line 18 that identifies the specific departments whose budgets will be decreased due to the reallocation and the impact the dollars will have on these departments or programs.

**TABLE 3 – PROJECTED EXPENSE & REVENUE ESTIMATES FOR APPLIED SCIENCE**

**PURPOSE:**

This table documents what the program will cost and how the institution plans to cover the costs. All cost and revenue projections should be in constant dollars. (Do not include an inflation factor.)

		<b>ESTIMATED AMOUNT in DOLLARS</b>				
		<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>
<b>Operating Expenses:</b>						
1	Faculty	\$117,120	\$214,720	\$214,720	\$214,720	\$214,720
2	Financial Aid specific to program					
3	Instructional Materials	1,000	2,000	2,000	2,000	2,000
4	Program Support	24,000	45,600	51,600	56,400	62,400
5	Rent/Lease	2,500	5,000	5,000	5,000	5,000
6	Internship/Other Operating Costs		12,600	12,600	16,100	16,100
7	<b>Total Operating Expenses</b>	<b>\$144,620</b>	<b>\$279,920</b>	<b>\$285,920</b>	<b>\$294,220</b>	<b>\$300,220</b>
<b>Program Start-Up Expenses:</b>						
8	Capital Construction					
9	Equipment Acquisitions					
10	Library Acquisitions					
11	<b>Total Program Start-Up Expenses</b>					
<b>TOTAL PROGRAM EXPENSES</b>		<b>\$144,620</b>	<b>\$279,920</b>	<b>\$285,920</b>	<b>\$294,220</b>	<b>\$300,220</b>
<b>Enrollment Revenue</b>						
12	General Fund: State Support	\$82,800	\$147,200	\$179,400	\$207,000	\$207,000
13	Cash Revenue: Tuition	28,005	51,866	73,154	88,727	88,727
14	Cash Revenue: Fees (40/credit fees)	24,000	45,600	51,600	56,400	62,400
<b>Other Revenue</b>						
15	Federal Grants					
16	Corporate Grants/Donations					
17	Other fund sources *					
18	Institutional Reallocation **					
<b>TOTAL PROGRAM REVENUE</b>		<b>\$134,805</b>	<b>\$244,666</b>	<b>\$304,154</b>	<b>\$352,127</b>	<b>\$358,127</b>

\* If revenues are projected in this line, please attach an explanation of the specific source of the funds.

\*\* Attach an explanation of the amounts reported in line 18 that identifies the specific departments whose budgets will be decreased due to the reallocation and the impact the dollars will have on these departments or programs.

**TOPIC:                    PROPOSAL FOR B.S. IN COMPUTER INFORMATION SYSTEMS  
                                 AT MESA STATE COLLEGE**

**PREPARED BY:        SHARON M. SAMSON**

**I.        SUMMARY**

The Trustees for The State Colleges of Colorado request Commission approval to offer a Bachelor of Science (B.S.) in Computer Information Systems at Mesa State College. Mesa currently offers a Bachelor of Business Administration (BBA) with a Computer Information Systems concentration. If the Commission approves this degree request, Mesa plans to discontinue the CIS concentration and redirect approximately 100 students into the new degree program. The proposed CIS degree program will graduate 30 students each year (Attachment A).

In its academic plan, Mesa State College indicated that the proposed degree program is a top priority of the college. The curriculum follows the national curriculum model specified by the Association of Information Technology Professionals (AITP). While some might question the lack of e-commerce or fourth generation programming language, Mesa intentionally adopted the model curriculum to meet the needs of its local market. The degree program provides students with specific skills listed in openings advertised in Grand Junction. It also meets national standards.

The proposed program has one obvious weakness for implementing a quality degree program – a shortage of teaching faculty in Computer Information Systems. While only one course is new, the degree program still requires Mesa to hire an additional full-time CIS faculty to deliver the full degree as designed. The institution has suggested outsourcing certain courses to address this dilemma. Mesa has had preliminary discussions with Metropolitan State College at Denver and US Open University regarding developing a strategic partnership for on-line delivery. The other option described in the proposal involves the use of adjunct faculty. This option appears less promising as an interim or long-term strategy. Most full-time computer professionals with the qualifications necessary to teach CIS courses do not have the flexibility to teach.

Five factors support approving the proposed degree program, including:

1. Shortage of computer business professionals in the western region of the state.
2. Computer Information Systems undergraduate degree programs are economic drivers for small cities and towns.
3. Mesa State College does not have any degree programs on the low demand list.
4. Mesa State College is offering a sophomore exam to its undergraduates.
5. The proposed degree program is based on the AITP national model curriculum. It is feasible to outsource CIS courses and actually enhance the quality of the degree program.

Approving this degree program provides Colorado an opportunity to study the effect on costs and enrollment of brokering on-line courses in situations where faculty resources are in short supply. Consequently, CCHE staff believe that if Mesa State College creates a strategic partnership to offer on-line CIS courses, it justifies approving the degree program.

Staff recommend approving the request for the B.S. in Computer Information System at Mesa State College but request Mesa State College to provide the Commission with the final plan for delivering the full curriculum using outside sources by June 2001.

## **II. BACKGROUND**

The concept paper for this degree program appeared before the Commission at its October 7, 1999 meeting. Seven issues were raised for clarification by the Commission staff and these were specifically addressed in the proposal. The Trustees subsequently approved the proposal at its meeting on September 8, 2000. The following is summarized from the Mesa proposal.

As an academic field, Computer Information Systems encompasses two broad areas:

- Acquisition, deployment, and management of information technology resources and services (the information systems function); and
- Development and evolution of technology infrastructures and systems for use in organization processes (system development).

The faculty and administration at Mesa State College propose a Bachelor of Science degree in Computer Information Systems based on the following principles:

1. A professional level computer information systems graduate requires advanced knowledge skills in computer information systems as well as a broad-based liberal arts education.
2. Mesa State College's Bachelor of Science in Computer Information Systems (CIS) will meet the growing needs of state, local and regional students, as well as industry.
3. Mesa State College's Bachelor of Science in Computer Information Systems will adhere to the Association of Information Technology Professionals' Model Curriculum and be based on common structures and degree programs in the United States and Canada. Following the national standard allows Mesa State College to remain pro-active in program offerings.

The goals of the Computer Information Systems program at Mesa State College will be to:

- Provide an avenue for baccalaureate education in computer information systems to meet the needs of business and industry on a local and regional level.
- Promote critical thinking and problem solving skills in the performance of systems analysis & design, programming and management.

- Instill in the students professional values and ethics as well as principles of business management, which are essential in the computer information systems profession.
- Prepare B.S. level computer information systems analysts for advancement into a Masters degree program or advanced professional education (e.g. certification in various information technology specialties from the Colorado Institute of Technology).
- Offer a strong undergraduate curriculum for the School of Business and Professional Studies thereby supporting the Master of Business Administration program.
- Support the traditional emphasis that Mesa State College places on communication skills, the liberal arts, and interdisciplinary education at the undergraduate level.

The outcomes of these goals will be measured through the implementation of specific course requirements and feedback from employers and graduates.

Mesa State College has approved a budget for four (4) faculty FTE, and an additional \$50,000 for dedicated lab, hardware and software to support the new program. Three FTE will be reallocated from the Business Administration program and one FTE is a newly funded faculty position. Mesa has sufficient space to support the new degree program (Attachment B).

### **III. STAFF ANALYSIS**

In analyzing the program proposal, the staff considered role and mission, duplication, program need and demand, and quality issues such as curriculum and resources. The Trustees of The State Colleges in Colorado have analyzed the quality, capacity and cost-effectiveness of the proposed degree program.

#### **Role and Mission**

The new proposed program is consistent with Mesa State College's mission as a general baccalaureate institution:

“Mesa State College ...shall be a general baccalaureate and specialized graduate institution with moderately selective admission. Mesa State shall offer liberal arts and sciences programs and a limited number of professional, technical, and graduate programs.”

In its academic plan, Mesa State College indicated that the proposed degree program is a top priority of the college.

#### **Duplication**

Several Colorado public colleges and universities offer an undergraduate degree program in

*Computer Information Systems*, including Colorado State University, Metropolitan State College and the University of Southern Colorado. However, no CIS degree is offered on the western slope. Ft. Lewis College and Mesa offer a *Computer Science* degree – a more technical degree that provides skills in algorithm design and construction, procedural abstraction, data storage, and computer resource utilization. A *Computer Information Systems* degree provides knowledge and skills on how information is processed and used in an organization. In short, *Computer Science* is a math-based degree program while *Computer Information Systems* is a business-based degree program. There does not appear to be unnecessary duplication in Colorado.

**Program Need and Demand**

The data from the Colorado Department of Labor indicate that shortages exist throughout Colorado for people with computer information system skills.

**Program Quality**

The curriculum follows the national curriculum model specified by the Association of Information Technology Professionals (AITP).

<b>Major Requirements</b>		
<b><u>Computer Information Systems Core</u></b>		
CSCI 110	Beginning Programming	3
*CISB 201	Fundamentals of Information Systems	3
CISB 205	Advanced Business Software	3
CISB 131	COBOL Programming	3
ELCT 260	Information Technology, Hardware & Software	3
CISB 392	Information Systems Theory and Practice	3
CISB 400	Data Communications and Network Management	3
CISB 442	Systems Analysis and Design	3
CISB 451	Database Administration	3
CISB 471	Advanced Information Systems	<u>3</u>
		30
<b><u>Business Support Courses</u></b>		
ACCT 201	Principles of Financial Accounting	3
ACCT 202	Principles of Managerial Accounting	3
BUGB 349	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
FINA 339	Managerial Finance	3
MANG 201	Principles of Management	3
MANG 331	Quantitative Decision Making	3
MARK 231	Principles of Marketing	3
MANG 491	Business Policy and Management	<u>3</u>
		30

Mesa State College intentionally adopted the AITP model curriculum. The first reason for this choice is because it meets the needs of its local market. While some might question the lack of e-commerce or fourth generation programming language, the degree program provides students with specific skills listed in job openings advertised in Grand Junction. For example, banks and hospitals still rely on COBOL programming to maintain their computer operations. The second reason is that model curriculum offers a cost-effective way to offer a CIS degree program. Most colleges, like Mesa, already offer many of the pre-requisites and required major courses in their undergraduate business degree programs. Students who enroll in CIS courses at other colleges can easily transfer the credits into the model curriculum.

Overall it appears to be a good curriculum. What would make it stronger is if CISB 471 becomes a capstone course where all things learned in the courses leading to it are demonstrated by the completion of a project that includes conceptualization, design, implementation, documentation, demonstration, and presentation of an information system.

#### **Capacity to Offer the Degree as Designed**

The Trustees in their analysis realized that funding of faculty is not the primary issue. While Mesa State College has committed the resources for funding an additional full-time Computer Information faculty member, the limited availability of computer teaching faculty creates a significant barrier. The CIS faculty shortage problem is a national problem and not isolated to the Mesa proposal. Smaller colleges are more vulnerable in this faculty competitive environment. While some industry personnel could support delivering the course as adjunct faculty, it is unclear that the Grand Junction area has a sufficient base of faculty resources to support a quality CIS program by itself. The Colorado Institute of Technology was created in part to assist Colorado institutions in addressing the IT faculty recruitment problem and provide incentives. However CIT is in the early fund raising phase and has not implemented a faculty recruitment initiative.

Instead Mesa proposes outsourcing certain courses to institutions offering comparable courses on-line, e.g., U.S. Open University. This is an innovative approach to providing access to a needed degree program where internal resources can support some, but not all of the proposed curriculum. There is some debate internally about "giving away" FTE. On the other hand, proponents of this approach believe "giving away FTE" through a partnership may actually generate additional FTE. Programs in the technology arena flourish by reputation. If Mesa provides quality instruction by creating strategic partnerships, it may attract greater number of students. Outsourcing courses through an online delivery creates greater visibility for the program and allows Mesa to serve a wider region than Grand Junction. Other Western Slope communities would be able to capitalize on the existence of this degree program as an economic driver.

Another option is to develop competencies that fulfill course requirements and place students in business operations as cooperative work experiences to attain the competencies – very similar to a teacher education field experience. The students would be able to apply skills in real world settings and receive compensation while learning. The industry partner would benefit from the work product that students produce on the job. A third option is the Colorado Extended Studies Program that may offer a considerable number of the required CIS courses through distance education. Mesa needs to make a decision and negotiate the partnership immediately (i.e., by February) if it seriously proposes to use one of these strategies.

The \$50,000 budgeted for additional hardware and software to support this program appears low. Hardware is the least costly of IT expenses. Software licenses and annual maintenance fees consume the majority of this budget line, and these are annual, not one-time costs. Mesa may need to review and revise this budget line prior to implementation. This is not a critical issue since the projected revenues are sufficient to cover increasing the computer software budget line by \$50,000 per year (Attachment C).

#### IV. STAFF RECOMMENDATION

**That the Commission approve the request of the Trustees of The State Colleges of Colorado to offer a Bachelor of Science in *Computer Information System* at Mesa State College but request Mesa State College to provide the Commission with the final plan for delivering the curriculum using outside sources by June 2001.**

**Attachment A**

TABLE 1: ENROLLMENT PROJECTIONS  
 Name of Program: B.S. in Computer Information Systems  
 Name of Institution: Mesa State College

**DEFINITIONS:**

Academic year is the period beginning July 1 and concluding June 30.

Headcount projections represent an unduplicated count of those students officially admitted to the program and enrolled at the institution during the academic year.

FTE is defined as the full-time equivalent number of those students majoring in the program, regardless of the classes enrolled, during the academic year.

Program graduate is defined as a student who finishes all academic program requirements and graduates with a formal award within a particular academic year.

**SPECIAL NOTES:**

To calculate the annual headcount enrollment, add new enrollees to the previous year headcount and subtract the number who graduated in the preceding year. Adjust by the anticipated attrition rate.

To calculate FTE, multiply the number of students times the projected number of credit hours students will be typically enrolled in per year and divide by 30.

The data in each column is the annual **unduplicated** number of declared program majors. Since this table documents program demand, course enrollments are not relevant and shall not be included in the headcount or FTE data.

		<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Full Implementation</b>
1-a	In-state Headcount	83	85	88	92	96	100
1-b	Out-of-State Headcount	4	5	6	7	8	10
2	Program Headcount	87	90	94	99	104	110
3-a	In-state FTE	54	55	57	60	62	65
3-b	Out-of-state FTE	2	5	5	5	7	8
4	Program FTE	56	60	62	65	69	73
5	Program Graduates	20	22	24	26	28	30

**Attachment B**

**TABLE 2: PHYSICAL CAPACITY ESTIMATES**

Name of Program: B.S. in Computer Information Systems  
Name of Institution: Mesa State College

Purpose: This table documents the physical capacity of the institution to offer the program and/or the plan for achieving the capacity. Complete A or B.

**Part A**

I certify that this proposed degree program can be fully implemented and accommodate the enrollment projections provided in this proposal without requiring additional space or renovating existing space during the first five years.

\_\_\_\_\_  
Governing Board Capital Construction Officer Date

**Part B**

	Column 1	Column 2	Column 3		Column 4		Column 5	Column 6
ASSIGNABLE SQUARE FEET	TOTAL NEEDED	AVAIL-ABLE	RENOVATION		NEW CONSTRUCTION		LEASE/RENT	REVENUE SOURCE*
TYPE OF SPACE			Immed	Future	Immed.	Future		
Classroom	2281	2281	0	0	N/A	N/A	N/A	N/A
Instructional Lab	1559	1559	0	0	N/A	N/A	N/A	N/A
Offices	390	390	0	0	N/A	N/A	N/A	N/A
Study	230	230	0	0	N/A	N/A	N/A	N/A
Special/General Use	998	998	0	0	N/A	N/A	N/A	N/A
Other:	0	0	0	0	N/A	N/A	N/A	N/A
<b>TOTAL</b>	<b>5458</b>	<b>5458</b>	<b>0</b>	<b>0</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

\* Capital Construction Fund (CCF), Research Building Revolving Fund (RBRF), Gift (GIFT), Grant (GR), Auxiliary Fund (AUX)

Attach a narrative describing the institutional contingency plan that addresses the space requirements of the proposed program or alternative delivery options, in the event that the request for capital construction or renovation is not approved.

**Attachment C**

**TABLE 3: PROJECTED EXPENSE AND REVENUE ESTIMATES**

**PURPOSE:** This table documents what the program will cost and how the institution plans to cover the costs. All cost and revenue projections should be in constant dollars (do not include an inflation factor).

		<b>ESTIMATED AMOUNT in DOLLARS</b>				
		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>Operating Expenses:</b>						
1	Faculty	211,667	217,576	229,716	236,125	242,713
2	Financial Aid specific to program	#	#	#	#	#
3	Instructional Materials	#	#	#	#	#
4	Program Administration	#	#	#	#	#
5	Rent/Lease	#	#	#	#	#
6	Other Operating Costs	#	#	#	#	#
7	<b>Total Operating Expenses</b>	211,667	217,576	229,716	236,125	242,713
<b>Program Start-Up Expenses</b>						
8	Capital Construction	0	0	0	0	0
9	Equipment Acquisitions	49,900	0	0	0	0
10	Library Acquisitions	0	0	1,000	1,000	1,000
11	<b>Total Program Start-Up Exp.</b>	0	0	0	0	0
<b>TOTAL PROGRAM EXPENSES</b>		261,567	217,576	230,716	237,125	243,713
<b>Enrollment Revenue</b>						
12	General Fund: State Support	217,000	232,500	240,250	251,875	267,375
13	Cash Revenue: Tuition	48,545	58,282	59,859	62,225	69,768
14	Cash Revenue: Fees	0	0	0	0	0
<b>Other Revenue</b>						
15	Federal Grants	0	0	0	0	0
16	Corporate Grants/Donations	0	0	0	0	0
17	Other fund sources *	49,900	0	0	0	0
18	Institutional Reallocation *	0	0	0	0	0
<b>TOTAL PROGRAM REVENUE</b>		315,445	290,782	300,109	314,100	337,143

# Costs currently in BBA with concentration in business computer Information systems. No new additional funds required.

**TOPIC: APPROVAL POLICY FOR SITE-BASED, OUT-OF-STATE AND OUT-OF-COUNTRY DEGREE PROGRAMS**

**PREPARED BY: ANDREW BRECKEL III**

**I. SUMMARY**

The purpose of this policy is to ensure that institutions sponsoring *site-based* out-of-state degree programs, certificates or degree completion programs are in compliance with statutory requirements (C.R.S. 23-5-116). It applies only to those degree programs that are physically offered outside the state of Colorado. In summary, the proposed policy

- states the statutory responsibility of the Colorado Commission on Higher Education related to this type of instruction,
- states the responsibility of the institution in ensuring the health and safety of students who are enrolled out-of-state or out-of-country,
- defines the approval criteria,
- outlines the review process, and
- specifies the proposal and budget format.

Approval for a single course offered out-of-state or out-of-country will continue to be reviewed for approval by applying the Policies and Procedures outlined in Appendix K of Section IV of the compilation of CCHE Policies.

CCHE staff recommend approval of the proposed **Approval Policy for Site-Based Out-of-State and Out-of-Country Degree Programs**.

**II. BACKGROUND**

Currently Section IV, Part E, **Instruction Out-of-State and Out-of-Country** of the compilation of CCHE does not specifically reference *complete degree programs, certificate programs or degree completion programs*. As Colorado public institutions continue to exercise their ability under 23-5-116, CRS. 1973, amended 1983 to offer instruction for credit and non-credit outside of Colorado and participate in the expanding global academic market place, it is likely that institutions will decide to offer complete degree, degree completion, or certificate programs.

### III. STAFF ANALYSIS

One of the frequent items on the Commission agenda is the *Report on Out-of-State Programs*. In this report, Commission staff report the approval of out-of-state and out-of-country courses that institutions are approved to offer. Approval of the courses is a staff decision under current CCHE policy. The policy refers only to “courses,” and not complete degree or certificate programs. Under the current procedures, each individual course in a degree or certificate program would need to be presented, with evidence that specific statutory requirements were met. While this is possible, it is an inefficient and time-intensive way for both a governing board and the Commission to act on the review of “out-of-state programs.” Furthermore, the breadth and scope of a *site-based* out-of-state or out-of-country degree or certificate program requires: a carefully constructed budget, more elaborate administrative support, appropriate infrastructure to support the academic experience and sensitivity to the additional exposure for all of the participants in the program.

Participation in the global academic market place increases the exposure and visibility of the entire Colorado public higher education system. Therefore it is responsible to have in place a policy that insures appropriate review of programs that public institutions plan to offer in the global academic market place in accordance with existing statute. The staff has reviewed the existing section of the CCHE policies, which specifically refer to the delivery of out-of-state and out-of-country instruction and finds them insufficient to efficiently review the delivery of complete degree and certificate programs. The proposed policy, which will expand Section IV, Part E, will provide the criteria needed by the colleges and universities to plan, administer, and budget for the delivery of approved degree programs outside of Colorado.

It is the intent of the proposed policy to provide Colorado public institutions with a simple set of procedures that will permit those institutions that plan to offer out-of-state or out-of-country programs to efficiently seek review for program approval. Programs offered out-of-state or out-of-country shall only be degree programs that the institution has the authority to offer. The curriculum and academic requirements of an out-of-state degree program shall be basically the same as those of an approved degree program that is offered on the institution’s campus. Consequently, the policy for out-of-state instruction deals with capacity, the infrastructure that is needed to support the degree out of state, and student health and safety concerns.

Institutions planning to offer complete degree programs or certificate programs out-of-state (i.e., beyond the seven states contiguous to Colorado) or out of the United States shall submit information in a format outlined in the policy as well as information requested for all types of out-of state and out-of-country instruction. The institution’s governing board shall approve proposals and submit the proposal to the Commission. The CCHE staff will review the proposal. If it meets statutory and CCHE criteria, the Executive Director will approve

the out-of-state program. Adoption of this policy delegates approval of out-of-state degree programs to the Executive Director. However, the policy has appropriately rigorous procedures, i.e., no action will be taken until any issues or concerns raised by the CCHE staff have been resolved by the governing board.

**IV. STAFF RECOMMENDATION**

**That the Commission approves the proposed Approval Policy for Site-Based Out-of-State and Out-of-Country Degree Programs.**

**STATUTORY AUTHORITY**

**Governing boards - authority to provide out-of-state courses.** (1) The governing board of any state institution of higher education may offer postsecondary courses at locations outside the state of Colorado for credit applicable toward a degree program. Each governing board shall promulgate policies and procedures concerning the administration of such courses. (C.R.S. 23-5-116).

## **Attachment A**

### **SECTION IV**

#### **PART E            APPROVAL POLICY FOR SITE-BASED OUT-OF-STATE AND OUT-OF-COUNTRY DEGREE PROGRAMS**

##### **1.00    Introduction**

This policy applies to all degree programs, certificates and degree completion programs that are physically offered out-of-state and out-of country by a Colorado state-supported institution of higher education. Approval for a single course offered out-state or out-of country will continue to be reviewed for approval by applying the Policies and Procedures outlined in Appendix K of Section IV of the compilation of CCHE Policies. Instruction delivered out-of-state or out-of-country is authorized in Colorado statute but subject to different review procedures. Degree programs offered out-of-state or out-of-country are limited to those degree programs that the Commission has approved and the institution has authority to offer. The curriculum and academic requirements shall be the same as those of the program when offered on the institution's campus. Such instruction will be part of the Extended Studies Program.

##### **2.00    Statutory Authority**

The Colorado Commission on Higher Education has broad statutory responsibility to ensure the quality of education offered by a state-supported institution and protect the students enrolled in these courses and programs. The statute C.R.S. 23-5-116, amended 1983, reads:

State institutions of higher education may offer instruction, for credit or non-credit, outside of Colorado. Each governing board shall have policies and procedures in place concerning the approval and administration of such courses. Governing boards are required by the statute to notify the Commission of their policies and procedures and to provide an annual report of programs sponsored by the institutions under their control. The statutes prohibit the use of state General Fund monies for out-of-state instruction.

### **3.00 Goals and Criteria**

#### **3.01 Policy Goals**

To ensure that institutions sponsoring out-of-state degree programs guarantee the quality of these programs, the safety of students enrolled in the programs, and the ability to graduate students in the programs offered without the use of state general fund monies.

To insure the safety of students enrolled in out-of-state and out-of-country programs, institutions should exercise precautions that are commensurate with the normal health and safety practices carried out on the home campus and that are appropriate for the off-campus location where the program is being conducted. For out-of-country programs, US State Department travel advisories should be reviewed and considered in the institutional decision to offer the program.

#### **3.02 Limitations and Exclusions**

State funds shall not be used for instruction of classes or degree programs delivered out-of-state or out-of-country. Course instruction shall be part of the Extended Studies Program and administered by the institution's designated Extended Studies office and in compliance with the policies and procedures of the Extended Studies Program.

The following types of instruction are excluded from the approval procedures pertaining to out-of-state and out-of-country programs. They are however subject to the same quality standards of out of state and out-of-country courses and programs:

- Out-of-state class excursions (field trips) that are scheduled parts of regular classes, including those that are state-funded courses or cash-funded courses.
- Correspondence courses and instruction delivered via television, videotape, or other mass media.
- Institution-sponsored study-abroad courses that are administered on-campus and offered primarily for the benefit of regularly enrolled degree-seeking students. In contrast, study-abroad courses advertised to the general public that enroll only a small proportion of persons who are regular, degree-seeking students shall be offered, cash-funded, through the Extended Studies Program.
- Internships, cooperative education experiences arranged for sites outside of Colorado that are offered to regularly-enrolled, degree-seeking students.

### **4.00 Process and Procedures**

Institutions planning to offer a complete degree program, certificate and or degree completion program out-of-state, beyond the seven states contiguous to Colorado, or out of

the United States, shall submit information in the format outlined in **Technical Appendix**

A. The proposal for delivery of a complete degree program, certificate and or a degree completion program shall be submitted through the institution's governing board and shall have the approval of the governing board. The proposal will be reviewed by CCHE staff, and if it meets statutory and CCHE criteria it will be recommended to the CCHE Executive Director for approval. No action will be taken by the institution until all issues and concerns raised by the staff have been resolved by the governing board.

A COPY OF THE DEGREE PROGRAM DESCRIPTION FROM THE INSTITUTION'S CATALOG SHOULD BE APPENDED.

A. **Criteria and Procedures for the Review of Proposals for the Delivery of Degree Programs Out-of-State or Out-of-Country**

Degree programs proposed for delivery out-of-state or out-of-country shall be reviewed by the CCHE staff to determine whether the proposed program meets quality criteria for off-campus programs, the program is approved for offering by the sponsoring institution, quality control methods are incorporated into administrative plans, and whether the program's curriculum and academic standards are the same as those for the program when it is delivered on-campus. State general fund monies may not be used to support costs of delivery of out-of-state instruction, including institutional indirect costs.

The Commission must receive proposals at least three (3) months in advance of the program's proposed start-up date.

**TECHNICAL APPENDIX A: Proposal Format**

**I. Approved Degree**

- A. Is the program to be offered one of the programs approved for offering by the institution and is it included in the institution's catalog? Is the title used exactly the same as the title of the approved program.
- B. Has the sponsoring institution's governing board taken specific action to approve delivery of the program off-campus? (Governing board approval is required.) Please append a copy of governing board minutes or other documentation showing board approval.

**II. Where and how the Program is to be delivered**

- A. Where is the program to be delivered? Identify the country, city, and specific facility in which the program is to be delivered. What arrangements are to be made with other entities for the use of facilities and who will manage the on-site facilities?
- B. Is the program to be delivered in cooperation with any other institution, foreign or domestic, and if so, identify that institution and append a copy of contracts or letters of agreement that detail the responsibilities of all parties.
- C. What method(s) will be used to deliver the instruction? If telecommunications technology is to be used, identify the technology and indicate where programming will originate and where it will be received.
- D. What precautions have been taken by the institution and governing board to ensure the health and safety of students enrolled in the program.

**III. Program Administration, Evaluation and Oversight**

- A. Describe the structure that the institution will use for administration and oversight of the program. List the name and affiliation of the on-site administrator and provide the names and titles of the central institutional administrators who have responsibility for oversight of the on-site administration, faculty, and program content and quality. If the responsible institutional administrators are replaced at any time, the names of their replacements shall be provided to CCHE.

- B. Describe the qualifications required of faculty and the source of faculty who will teach in the proposed program. Identify all faculty who are contracted or who have agreed to teach in the program by name, title, institution or organization in which regularly employed, and highest earned degree.
- C. Describe in detail the methods the institution and the governing board will use to evaluate the quality of the teaching, supporting materials, equipment (e.g., library, computer, laboratory, or other types of resources that are needed to deliver the program successfully), the physical facilities in which instruction is delivered, the quality of student life, and the effectiveness of the on-site administrator(s).

**IV. Program Description**

- A. Identify the type of students this program is designed to serve (e.g. part-time, professionals, employees of specific organizations, persons training for new careers, etc.); and if the program is to be delivered in another country, identify the source of students and their qualifications for entering the program.
- B. Describe the program requirements (such as total hours, credit hour distribution, etc.) and list titles of courses to be offered in the program. Describe any variations in the program proposed for out-of-state delivery from the program offered on-campus.
- C. Describe the admission requirements. If different from general institutional requirements describe how and why they are different.
- D. Are there enrollment limits or restrictions? If so, describe and explain them.

**V. Costs to Students**

Identify the costs to individual students for:

Tuition (per semester credit hour)	\$ _____
Program Fees (identify_	\$ _____
Room and Board	\$ _____
Other	\$ _____

**VI. Program Budget**

Use the budget format attached.

**VII. Enrollment Projections**

Projected number of admissions to the program in the first year.

**PROJECTED EXPENSE AND REVENUE ESTIMATES**

All costs and revenue projections should be in constant dollars (do not include an inflation factor)

ESTIMATED AMOUNT IN DOLLARS

<b>OPERATING EXPENSES</b>	<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>
Faculty			
Financial Aid Specific to the Program			
Instructional Materials			
Program Administration			
Auditing, Quality Control Costs			
Rent/Lease			
Indirect Costs			
Other Operating Expenses			
<b>Total Operating Expenses</b>			
<b>PROGRAM START-UP EXPENSES</b>	<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>
<b>PROGRAM START-UP EXPENSES</b>			
Capital Construction			
Equipment Acquisitions			
Library Acquisitions			
Total Program Start-Up Expenses			
Total Program Start-Up Expenses			
<b>ENROLLMENT REVENUE</b>	<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>
General Fund: State Support*	-0-	-0-	-0-

Cash Revenue: Tuition			
Cash Revenue: Fees			
<b>OTHER REVENUE</b>			
Federal Grants			
Corporate Grants/Donations			
Other Fund Sources**			
Institutional Reallocation**			
<b>TOTAL PROGRAM REVENUE</b>			

\* State General Fund monies may not be used to support out-of-state instruction.

\*\*If revenues are projected in this line, please attach an explanation of the specific source of the funds. State funds may not be reallocated

**TOPIC: CSOBA LOANS TO COLORADO INSTITUTIONS OF HIGHER EDUCATION**

**PREPARED BY: DEBRA DEMUTH**

**I. SUMMARY**

The Colorado Student Obligation Bond Authority (“COSBA”) has been granted the power, under Section 23-3.1-206(h) of the Colorado statutes, to make loans to Colorado institutions of higher education for the purposes of funding student loans. CSOBA is permitted to use proceeds of bond funds for this purpose but must submit a report to the Commission prior to the issuance of bonds to finance such loans.

The written report sets forth certain information regarding the use of CSOBA bond proceeds for the purpose of making loans to Colorado institutions of higher education and seeks waiver of the requirement to submit such information prior to the issuance of the bonds.

**II. BACKGROUND**

CSOBA has issued various bonds for the purpose of buying or originating student loans. Currently, about \$90 million of these bond proceeds are available for this purpose.

In January 2000, CSOBA offered a new program in response to a request from the University of Denver. Under this program, CSOBA loans money to the university to make loans to graduate students. CSOBA then buys the loans from the university at a premium. The profits earned by the university are used to primarily assist with the financial aid programs at that school. Attached is an overview of this program.

CSOBA would like to expand this program to other Colorado institutions. In order to do this, CSOBA will need to use bond proceeds to fund the loan to the school used to originate the student loan. Therefore, in accordance with Section 23-3.1-208(b), CSOBA is submitting the attached Program Overview and Background to the Commission. The Official Statements of the Bonds have been provided to the Executive Director.

**III. STAFF RECOMMENDATION**

**That the Commission accept the information submitted and approve that such submission satisfies the requirements of Section 23-3.1-208(b) retroactively.**

**Attachments:**

Overview of College Lender Program  
Background

**Appendix A**

**STATUTORY AUTHORITY**

The Colorado Student Obligation Bond Authority has been granted power to make loans, from bond proceeds or other moneys available to Colorado institutions of higher education and Colorado nonprofit corporations acting for such institutions, for the purpose of funding student obligations (defined by the Act as an "authority loan"). Section 23-3.1-206 (h) C.R.S.

**Attachment A**

**COLORADO STUDENT OBLIGATION BOND AUTHORITY  
OVERVIEW OF COLLEGE LENDER PROGRAM**

Program Structure:

CSOBA and the school enter into a financing agreement whereby CSOBA will use its bond proceeds to lend money, in the form of a line of credit, to the school. The school will use this line of credit to provide loans to its graduate program students. These student loans will serve as collateral for the line of credit.

CSOBA and the school will also enter into a purchase agreement. Under this agreement CSOBA will purchase the student loans from the school for an agreed upon premium. The proceeds from sale paid to the school will be used: first to pay off the line of credit, including interest, and second to enhance financial aid provided by the school.

Who Benefits:

This new program benefits the school, graduate students and CSOBA.

*The school:* benefits because it makes money holding the loans as well as when the loans are sold to CSOBA at a premium. These profits can then be used to enhance their financial aid programs.

The school assumes little to no risk because the line of credit is collateralized by the student loans, and these loans in turn are 98% guaranteed by CSLP. In addition, CSOBA can offer a low interest rate on the school's line of credit increasing their net revenues.

*The graduate student:* benefits because all of the loans offered by the school will include most of CSOBA's Borrower Benefits. In general, if a student pays on time for 48 months and uses automated deposit, they can lower their interest rate on the loan by 2.25%. This can substantially reduce the cost of the loan to the student.

*CSOBA:* has access to purchase high quality loans to add to its loan portfolio. Over the long term these loans are more profitable for CSOBA because they are less likely to default and provide a higher rate of return due to the typically high loan balance.

Why Involve the Commission:

As detailed in the attached, CSOBA is required to submit certain information to the Commission in order to use our bond proceeds for the purpose of making loans to Colorado institutions of higher education. We are submitting that information at this time and seeking a waiver of the requirement to have done so prior to the bond issuance.

**Attachment B**

**BACKGROUND**

1. Colorado Student Obligation Bond Authority ("CSOBA") was established by and exists under Title 23, Article 3.1, Part 2 of Colorado Revised Statutes, as amended (the "Act").
2. Under Section 23-3.1-206(h), CSOBA has been granted the power to make loans, from bond proceeds or other moneys available, to Colorado institutions of higher education and Colorado nonprofit corporations acting for such institutions, for the purpose of funding student obligations (defined by the Act as an "authority loan").
3. CSOBA is permitted to issue its bonds for the purpose of making authority loans.
4. Prior to the issuance of any bonds to finance the making of authority loans, CSOBA must submit the following in accordance with Section 23-3.1-208(b):
  - (i) to the Colorado commission on higher education at a regularly scheduled meeting immediately prior to issuance of the bonds, a report setting forth certain information regarding the bonds and the proposed authority loan or loans to be made with the bond proceeds;
  - (ii) to the executive director of the commission, a copy of the preliminary official statement relating to the bonds; and
  - (iii) to the commission at a regularly scheduled meeting immediately following issuance of the bonds, a copy of the official statement relating to the bonds.
5. The Act provides in Section 23-3.1-208(b)(IV) that it shall not be a ground for invalidating or challenging the bonds if the final terms differ from the report submitted to the commission or if the preliminary official statement differs from the official statement submitted to the commission.
6. CSOBA has previously issued its Weekly Adjustable/Fixed Rate Student Loan Revenue Bonds, Series 1989 A; its Weekly Adjustable/Fixed Rate Student Loan Program Senior Bonds, Series 1990 A; its Adjustable Rate Senior Lien Student Loan Revenue Bonds, 1999 Series A-1, A-2 and A-3; and its Taxable Floating Rate Senior Lien Student Loan Revenue Notes, 1999 Series A-4 (together the "1999 Adjustable Bonds"), issued in the aggregate principal amount of \$454,905,000, pursuant to certain indentures of trust between CSOBA and The Bank of New York, as trustee (the "Adjustable Indentures"). Proceeds of the 1999 Adjustable Bonds in the approximate amount of \$54,220,000 remain on deposit in the Loan Fund held under the Adjustable Indentures. Amounts in such Loan Fund are permitted by the Adjustable Indentures to be expended for the origination or acquisition of guaranteed student loans. The 1999

Adjustable Bonds are limited obligations of CSOBA, secured by income derived from the guaranteed student loans and by a Municipal Bond Insurance Policy issued by Ambac Assurance Corporation, and currently bear interest at a variable interest rate determined weekly for Series 1989 A, 1990 A, 1999 A-1, A-2, and A-3, and monthly for Series 1999 A-4. The 1999 Adjustable Bonds were sold by negotiated sale to William R. Hough & Co. and George K. Baum & Company.

7. CSOBA has also previously issued its Student Loan Revenue Notes and Bonds, 1999 Series IV-A1, IV-A2, IV-A3 and IV-A4 (the "1999 Auction Rate Bonds"), issued in the aggregate principal amount of \$234,700,000, pursuant to certain indentures of trust between CSOBA and The Bank of New York, as trustee (the "Auction Rate Indentures"). Proceeds of the 1999 Auction Rate Bonds in the approximate amount of \$39,400,000 remain on deposit in the Loan Fund held under the Auction Rate Indentures to be expended for the origination or acquisition of guaranteed student loans. The 1999 Auction Rate Bonds are limited obligations of CSOBA, secured by income derived from the guaranteed student loans, and bear interest at a variable interest rate determined by period public auction. The 1999 Auction Rate Bonds were sold by negotiated sale to William R. Hough & Co. and George K. Baum & Company.
8. CSOBA wishes to use available proceeds of the 1999 Adjustable Bonds and the 1999 Auction Rate Bonds for the purpose of making of authority loans to various institutions of higher education in Colorado in order to enable such institutions to originate guaranteed student loans for their graduate program students. These authority loans would be collateralized by the guaranteed student loans so financed.
9. The Adjustable Indentures and the Auction Rate Indentures will be amended to permit use of bond proceeds for the purpose of making such authority loans and to provide that such Bonds will be additionally secured by repayments of such authority loans.
10. Although CSOBA did not satisfy the requirements of Section 23-3.1-208(b) at the time of issuance of the 1999 Adjustable Bonds or the 1999 Auction Rate Bonds, CSOBA wishes to satisfy those requirements retroactively in order to permit proceeds of such Bonds to be used for the purpose of making authority loans.

CSOBA submitted to the Commission copies of: (a) the Adjustable Indentures; (b) the Auction Rate Indentures; (c) the bond purchase agreements relating to the Bonds; (d) a form of Revolving Financing Agreement to be entered in connection with the authority loans proposed to be financed with proceeds of the Bonds; and (e) a copy of each official statement relating to the Bonds.

**TOPIC:                    PROPOSED MOTIONS REGARDING DISTANCE EDUCATION**

**PREPARED BY:        JEFF RICHARDSON**

**I.        SUMMARY**

Ten motions are presented herein for adoption by the Commission to effect policy direction regarding distance education coordination for the State.

The twin policy objectives of staff are (a) to maximize access to distance education for Colorado residents, and (b) to conduct distance education programs in a cost-effective manner. Staff believes the motions establish the organizational structures, information systems, and funding incentives necessary to reach these objectives.

**II.       BACKGROUND**

The November 2, 2000, CCHE Agenda Item VII, D included a written report prepared by the CCHE Distance Education Taskforce. The Agenda Item presented the background, staff analysis and staff recommendations regarding the report, together with a set of nine proposed motions.

While the Commission is referred to the November Agenda Item for full coverage of the issues considered by the taskforce and the resulting recommendations, it should be noted here that distance education courses are routinely included in institutions' FTE counts for state funding. Those that aren't are offered through Extended Studies programs at the election of the institutions. This funding parity with ordinary classes reflects the clear consensus of staff and the taskforce that distance education merely offers an alternative form of instructional delivery and otherwise leaves unaltered the educational compact between student, institution and state.

**III.      STAFF ANALYSIS**

Staff has solicited and obtained written feedback from each system regarding the November motions. A follow-up meeting was held of the CCHE Distance Education Taskforce to synthesize this feedback and reconcile it with the position of CCHE staff. The following motions incorporate these efforts to develop a consensus approach.

A key concern of the institutions is that centralized incentives for distance education program development not be funded at the expense of existing resident instruction or distance programs.

#### **IV. STAFF RECOMMENDATION**

**That the Commission adopt the following motions be adopted by the Commission:**

**1. Regarding the establishment of the Distance Education Coordinating Council, the Commission hereby establishes a Distance Education Coordinating Council as an advisory body to the Commission and to the institutions. It shall be comprised of one representative from each system and one representative from CCHE. It shall coordinate with the other CCHE councils. Initial priority tasks charged to the DECC to be completed by the end of 2001 shall be to:**

- Conduct a statewide market study of distance education. (See Motion #2.)**
- Develop an online statewide course catalog for distance education. (See Motion #3.)**
- Issue a statewide RFP and award for outsourced distance education services. (See Motion #4.)**
- Coordinate the development of a cost model and cost reporting guidelines. (See Motion #7.)**
- Make recommendations regarding tuition and fees for distance education. (See Motion # 8.)**

**The DECC shall also be charged with making funding recommendations to the Commission for disbursement of centralized State incentive funding for distance education program development when such funding becomes available. (See Motion #6.)**

- 2. Regarding the conduct of a market study of distance education. Resolved by the Commission that the institutions be requested to fund and carry out through the DECC a statewide market study of distance education along the lines of the study proposed in the October 2000 Distance Education Taskforce Report (pp. 6-10).**
- 3. Regarding the establishment of a statewide online course catalog. Resolved by the Commission that, upon the availability of adequate funding, the DECC be tasked to establish a statewide online course catalog, that the institutions be requested to cooperate in the provision of the necessary course data, and that CCHE staff coordinate this task with the similar effort of the Colorado Institute of Technology.**
- 4. Regarding issuance of RFP for outsourcing distance education support services. Resolved by the Commission that the DECC prepare and issue a request for proposals to solicit price schedules for outsourced distance education services, select at least two vendors based on a combination of price and quality, and issue**

permissive State awards to these vendors.

5. **Regarding participation in the State Portal Project. Resolved by the Commission that CCHE fully supports the State Portal Project and seeks to provide increased educational access and convenience to Colorado citizens to higher education services through the State Portal Project through features developed under State funding, with cooperation from institutions regarding access to educational services, but respecting the independence and autonomy of the institutions' own Web sites.**
6. **Regarding State incentive grants for distance education program development. Resolved by the Commission that staff (with input from the DECC and Extended Studies Officers) is directed to explore options for establishing and sustaining a central fund to provide incentive grants for the development of distance education programs. The purpose of this fund shall be to:**
  - **stimulate the development degree and certificate programs fully available online**
  - **foster collaboration among institutions in developing and delivering online programs**
  - **provide student-centered access to distance education**
  - **explore cost-effective methods of online course development and delivery**

**DECC shall adopt criteria for awarding development funds similar to those presented in the October 2000 Distance Education Taskforce Report (pp. 50-51).**

7. **Regarding the development of cost models and cost reporting guidelines for distance education. Resolved by the Commission that the DECC be directed to work through the CFO, CAO, and CIO councils of CCHE to develop cost models and cost reporting guidelines for distance education programs at all Colorado public institutions of higher education. Said models and mechanisms shall be sensitive and responsive to the wide variety of distance education programs currently offered by Colorado institutions. They shall also explore the cost structure of alternative development and delivery mechanisms designed to better capture the productivity potential of this technology.**
8. **Regarding distance education tuition and fees. Resolved by the Commission that the DECC be charged with making recommendations regarding distance education tuition and fees, and that said recommendations take into account the following factors:**
  - **the public interest of increased access to educational opportunity**
  - **the actual cost of distance education based on the cost models and reporting**
  - **the potential for increased productivity in development and delivery**

- the funding base and funding requirements of existing resident instruction
  - the proper distinction between tuition and fees
  - allocation of revenue among developing, delivering, and home institutions
9. **Regarding intellectual property. Resolved by the Commission that by November 1, 2001 all institutions shall file with the Commission an intellectual property policy for their institutions that covers copyright issues, including content developed by faculty for distance education purposes.**
10. **Regarding guiding principles for the conduct of distance education programs at Colorado public institutions of higher education. Resolved by the Commission that the set of principles developed by the American Council on Education entitled, *Guiding Principles for Distance Learning in a Learning Society*, are hereby adopted as policy guidance to Colorado public institutions of higher education, as amended from time to time by the DECC.**

**Appendix A**

**STATUTORY AUTHORITY**

**C.R.S. 23-1-109.** Duties and powers of the commission with regard to off-campus instruction. (4)  
The commission shall administer any centralized, statewide extension and continuing education program of instruction which may be offered by any state-supported baccalaureate and graduate institution. All instruction offered outside the geographic boundaries of the campus, including instruction delivered by television or other technological means, shall be a part of this program unless exempted by policy and action of the commission.

**TOPIC:                    URBAN            LAND            INSTITUTE            REVIEW            OF  
FITZSIMONS/UNIVERSITY   OF   COLORADO   HOSPITAL  
PROJECT, CAPITAL CONSTRUCTION DECISIONS**

**PREPARED BY:    JEANNE ADKINS**

**I.        SUMMARY**

The Urban Land Institute (ULI) has completed its assessment of the proposed University of Colorado Hospital move to the old Fitzsimons Army Medical Center. A summary of the recommendations regarding all questions addressed to the panel in the Colorado Commission on Higher Education and University of Colorado System review request is attached. The Commission's next step is to determine whether it will accept, expand or alter any of the recommendations and the impact of the recommendations on forwarding the three state capital construction-funded projects proposed by the institution for the current year.

**II.       BACKGROUND**

In May 1999, the Commission entered into an agreement with ULI, the University of Colorado System, and the University of Colorado Health Sciences Center (UCHSC) to request an in-depth review of the proposed move of the UCHSC facilities from the current 9<sup>th</sup> Avenue Campus to the site of the former Fitzsimons Army Medical Center.

Pending the review, the Commission had put decisions on hold to forward the \$943,000 request for infrastructure, and release of allocated but not released funding for the Education Building and its second year funding request. The Commission also put on hold a recommendation to fund the annual payment to the statutorily created Fitzsimons Trust Fund.

A complete summary of the ULI panel's recommendations is attached, however, in general, the panel recommended that the state and the institution would realize significant savings by accelerating wherever possible the timetable for the project. Increased construction costs and uncertain economic conditions can add to the ultimate project cost increasing the potential debt for the institution. Although the panel raised some concern about the overall debt ratio for the UCHSC for the life of the project, it urged that the project proceed as quickly as funds allow anticipating that debt ratios would remain as projected and cost estimates would prove valid for the long-term.

An over-arching recommendation from the panel, however, was that oversight of the project was insufficient for the scope of the construction and magnitude of the investment.

The panel recommended the legislature create a three-person oversight panel with significant responsibility and an independent director who reports to the panel. That

individual would have a small staff and be responsible for construction management and fiscal oversight of the project.

This recommendation addresses the most critical issue raised by Commission members concerning the project for the past 18 months. Lack of an external review process through the life of the project is crucial since the project spans 12 years in its major development stage (1998-2010) and potentially another eight to ten years. Coordination of the project crossing multiple legislative sessions and gubernatorial transitions raised continuity issues for the panel.

### **III. STAFF RECOMMENDATION**

**Staff recommends the Commission submit a reprioritized list to the Office of State Planning and Budgeting, the legislative Capital Development Committee and the Joint Budget Committee moving the Trust Fund contribution, the infrastructure project and the top of the continuation project funding list.**

**Staff also recommends the first-year allocation for the Education facility placed in the Trust Fund in the FY00-01 Long Bill be appropriated to the institution and that the second-year funding for the project be placed at the top of the continuation project second-phase grouping of projects.**

**The effect of this recommendation would be to ensure the projects receive continuation funding. It would, however, move all other projects provided initial funding in the FY00-01 Long Bill down. In the case of final-phase projects, the infrastructure and trust fund appropriations would move each project down two spots on the list. None likely would be significantly impacted since at this point, it appears capital funding is available for all final phase projects.**

**However, the impact of the decision to place the Education Building ahead of all first-phase projects approved in the current fiscal year could result in some projects on that list being delayed.**

**Specifically, the four pilot projects where funding was restricted post-legislative session until CCHE approved final program plan revisions could be delayed if Amendment 23 restricts capital construction funding in its initial year or longer. The Commission had referred those projects to the legislature as the final four continuation projects. Those projects include: the Colorado State University Renovation of the Old Fort Collins High School, the CU Law School, the Adams State Business College Renovation and the Bishop-Lehr Renovation at University of Northern Colorado.**

**Attachment A**

**DRAFT Summary of Findings and Recommendations  
ULI Advisory Services Panel  
UCHSC Campus Relocation  
December 3 – 8, 2000**

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**General Findings**

- What this panel is NOT about is “Fitzsimons versus 9<sup>th</sup> Avenue”. It is clear to the panel that this relocation will most likely occur. The panel addressed how to make Fitzsimons the world-class health sciences center it has the very real potential to be. With regard to the 9<sup>th</sup> Avenue campus, the panel looked at how best for HSC to vacate the location and what are the best re-use strategies for the future.
- The panel identified four major themes:
  - Timing and phasing
  - Financial
  - Validation
  - Oversight
- The panel strongly recommends accelerating the move to Fitzsimons and believes the resources are available to complete the move in this time frame.
- A new management structures is needed to provide oversight of the project (discussed in the Implementation Section).
- The panel addressed the issues in four major categories
  - Market potential
  - Development strategies
  - Planning
  - Implementation

**Market Potential**

- The panel believes that the University of Colorado Health Sciences Center and the University of Colorado Hospital have a tremendous opportunity to create the preeminent medical, research and education facility not only in the Rocky Mountain Region, but the nation.
- The current in-patient market share of less than 7% is somewhat low for a distinguished academic health center.
- Some reasons for the relatively low market share include the indigent image of the former Colorado General Hospital name, old facilities, parking difficulties, and a

complicated congested environment. The new Fitzsimons site would improve most of those short-comings.

- The Stapleton and Lowery residential developments are significant new markets that can be captured with well-planned marketing and promotional initiatives.
- There is a need for improved interaction and cooperation between the hospital and faculty physicians to become providers in desirable managed care plans. Interdisciplinary programs with colleges in nursing, pharmacy, and dentistry are also an advantage, and the move to the new site should enhance those efforts significantly.
- By shortening the transition time of the move to the new campus, the clinical and marketing aspects of the plan would benefit greatly. Availability of faculty in one site, and one stop comprehensive services would improve quality care and the perceptions of the patients and the public. A shorter transition time might allay concerns of some faculty about disruptions in research programs and fragmentation of patient care.
- Primary stakeholders in the new facility, which include physicians, researchers, educators, and students, will all benefit from state of the art facilities in a central core area.
- The plan is clear in its desire to include key affiliations on the new campus and the panel concurs. Accordingly, the effort being expended to attract the affiliates is in the best interest of the university as well as the stakeholders. The economic advantages of the presence of affiliates in the new campus is enormous. Centralized laboratories, radiological services, purchasing and other economy of scale services could avoid very expensive duplication of personnel and equipment. However, the success of the plan does not appear to be dependent on the affiliates moving to the new campus immediately. It is possible that affiliates will choose to locate on the campus gradually as their capital needs require. The master plan does take into consideration sites for these purposes and to a lesser extent plans to take advantage of the economies of scale. The relocation of one or more of the major affiliates would, indeed, be a valuable complimentary development on the new campus and impact favorably on the three major missions of the health sciences center.
- While the facility is well positioned on the macro level from a site perspective (interconnection of buildings, convenience of common areas, and central location of administrative area), the panel had a few concerns
  - The panel is concerned over the number of surface parking spaces given the level of development that is proposed. The current plan proposes a “net” new

number of surface spaces at 3,165, with the current number of spaces on the site unknown. Given the level of build-out for HSC and UCH during the 12-year time horizon, which is in excess of 3.1 million square feet, and factoring in that the structured parking is scheduled for a time-frame thereafter, this needs to be addressed.

- Stakeholders in the project that will also be tenants of developed buildings, including the possible affiliates, should continue to be consulted on design and location as this will directly impact their time and work efficiencies thereby maximizing the use of the facility from an economic standpoint. If affiliates are currently not coordinated into the planning process, then immediate steps should be taken to do this.
- The demographics surrounding the Fitzsimons site are noticeably different from the current campus, and as one would expect, densities are greater closer to the urban core of the city. However, it should be pointed out that
  - There are pockets of high-density areas surrounding the Fitzsimons campus;
  - There is a tremendous amount of new development in the area surrounding the campus; and
  - The potential for growth in market share is greater at the Fitzsimons Campus as indicated by the growth rates.
- Based upon the preceding, the panel cannot assume that the move will diminish market share as the geographical separation from the current facility is not that great, and in fact, the market share should be enhanced by the broadening of the market. This however can only be accomplished through a well-planned and executed marketing campaign.
- Since HSC's goal is to be in the top 10 percent of national health centers and professional schools, the growth plan is fundamentally sound and exhibits the flexibility to accommodate needs into the future. HSC has acknowledged that the constraints to growth are obvious and grounded in the fiscal ability of HSC to deliver product. However, in order to be a "world-class" facility, the HSC and UCH need to have the ability to provide growth areas. This is one significant criterion that is lacking at the current campus, and is resolved with this move.
- Of concern is the ongoing morale of a portion of the HSC faculty in terms of treatment in its requests and needs for space, which can often be conflicting. HSC has stated that it will adhere to proposed principles as defined by a subcommittee, with a permanent committee to be established. It is imperative that campus

constituencies be a part of this committee to ensure the fair and equitable distribution of space.

### **Development Strategies**

- There are 2 over-riding strategies that the panel recommends as the framework for the planning and implementation of the move to Fitzsimons
  - To the degree allowable within statutory requirements, adopt procedures, financial analyses, timetables and accountability consistent with those of a large-scale public/private real estate project rather than a institutional building program.
  - To the degree that public and private funding sources permit accelerate the development of the HSC. (Time is money, especially in development).
- Communicating the vision for this tradition-breaking and new step into 21<sup>st</sup> century medical technology is critical. Engaging the “Community” in this vision has the potential for building public support and new markets. The “Community” goes far beyond the immediate area. It includes the Front Range, the state of Colorado, other parts of the Mountain West, present and future users; alumni, and funding sources – public and private. Regular communications from respected government, academic, and business leaders need to reach a broad national audience to tell this story. All media venues should be utilized, including the development of a web page with timely, factual project updates.

The new Anschutz complex should be heralded as a remarkable step that turns concept into reality. This opening should be used to create vitality and to increase visibility. This visibility is important not only for the success of these facilities, but also as evidence that the project is up and running on this first stage. Significant stories can be crafted about the quality on-time and on-budget implementation that lend credibility to the entire multi-year project. Subsequent story opportunities will include the multi-disciplinary teaching methods, the close physical proximity of the facilities, the opportunities for expansion, the adjacent tax-generating FRA sites for private opportunities for partnership, and the 21<sup>st</sup> century technology infrastructure.

### ***Strategies for Fitzsimons***

- The panel has concerns regarding the adequacy of the transportation planning. In particular, the assumptions made regarding the level and pace of infrastructure improvements may be overly optimistic. The proposed accelerated pace of the project, the new development at Lowery and Stapleton, the contiguous FRA development, and the likely and desirable relocation of many affiliated institutions may strain the existing transportation system.

HSC, the FRA, the cities of Aurora and Denver and the Stapleton development interests need to jointly participate in an on-going traffic planning and monitoring analysis.

- The panel recommends proceeding with the education facility concurrent with the research buildings. Benefits include:
  - Minimizing the time, financial, and convenience costs associated with an extended transition
  - Minimizing the impact of escalating construction costs on total project cost
  - Maximizing the opportunities for collaboration and integration of teaching and research
  - Maximizing utilization of infrastructure
  - Creating a critical mass and evidence of public/private commitment
- As mentioned earlier, the panel recommends accelerating the construction of the new University Hospital.
  - The panel's analysis has concluded that the hospital has the financial capacity to develop the \$350 million dollar 200 bed facility, for occupancy as early as 2005 or 2006.
  - The over-riding benefit from an accelerated University Hospital move is the ability to integrate at one location the research, educational and clinic facilities.

*Management/Operations  
Fitzsimons Campus*

- A common Memo of Understanding between HSC and campus affiliates should be developed that delineates mutual responsibilities including agreement with design review/controls. A common financial formula for area services should be developed based on some combination of objective criteria, e.g. square footage, number of employees, students, visitors, and annual budgets..

*Strategies for the 9<sup>th</sup> Avenue Campus*

- Information gathering on age, condition, construction materials and potential hazards, flexibility, connectivity, and expected availability should be undertaken in the near future.

- Stakeholders within the University system, in the 9<sup>th</sup> Avenue area, and elsewhere should be involved and included in the identification of logical reuse possibilities.
- A method of assessing costs and benefits of various strategies should be developed. For example, in the analysis of the 70 leases of outside space, it may or may not be cost effective to move many of these uses back to 9<sup>th</sup> Avenue. With so many stakeholders in the 9<sup>th</sup> Avenue area, it may well be best to broaden the thinking on what defines both costs and benefits in more than financial terms.

### **Planning Issues - Exit Strategy for the 9<sup>th</sup> Avenue Campus**

- The 9<sup>th</sup> Avenue site, cannot be turned to re-use until the current HSC and Hospital activities are relocated to Fitzsimons.
- The panel prepared three scenarios

#### ➤ **Scenario “A”**

This minimum scope concept proposes the demolition of those structures generally listed as in poor condition. The buildings and parking structures remaining would be refurbished for additional re-use by the University of Colorado, providing approximately 1,758,455 gsf. This includes the hospital and critical care tower, but excludes the parking structures (see Table 1). This should provide more than enough space to consolidate most of the 50 to 70 leased spaces that UCHSC currently has in the Denver area.

In addition to moderately renovating those structures to remain, this plan includes:

- The demolition of approximately 860,000 gross square feet (gsf) of buildings;
- Saving the existing School of Medicine Building;
- Creation of opportunities for open space, and sites for additional on-grade parking;
- Proposed removal of the elevated walkway/bridge across E. 9<sup>th</sup> Avenue;
- Retains existing vehicular traffic patterns.

#### ➤ **Scenario “B”**

The plan anticipates retention of the Hospital and HSC land, but vacating all other facilities. The panel recommends that the Board of Regents selects a developer from several RFP's to Re-Develop the site. The RFP should include the disposition of the affiliate. Veterans Administration Hospital, if they do

relocate to Fitzsimons. This is important because it provides an additional 10 to 12 acres for a larger, contiguous site development;

➤ Scenario "C"

The plan is the most aggressive, but perhaps the most responsive to the neighborhood; and creates flexibility for re-use by the University on an "as-needed" basis. The plan:

- Retains both parking structures and provides room for doubling the size of each.
- Retains the recently constructed Bio Medical Research Building, the Hospital Building, and Pharmacy Building which when combined totals over 850,000 gross square feet (gsf).
- Provides for the creation of future building sites for either classroom or office space another 750,000 to 1,000,000 gsf.
- Creates low-rise commercial construction on the north side of E. 8<sup>th</sup> Avenue.
- Provides large areas for the development of residential use along Clermont, and residential infill on parcels south of E. 8<sup>th</sup> Avenue; and north of E. 11<sup>th</sup> Avenue.

The City of Denver may consider extending Bellaire Street through the site from East 8<sup>th</sup> to East 11<sup>th</sup>.

*Fitzsimons*

- The panel is impressed with the overall design of the master plan for this site.
- The on-site transportation and parking areas may need to be further studied since both the light-rail and the 17<sup>th</sup>/Evergreen vehicular connector may not occur for more than 10 years. This will be especially important as the phased building construction is brought on sooner than originally proposed.
- HSC should participate in any discussions of planned developments around its property, particularly those parcels directly across from the main entrance of the campus at Colfax and Ursula. A suggested method would be to create a joint committee to review proposed development.

## Implementation

- The panel's recommendations addressed two main issues:
  - Financial accountability
  - Management and oversight
- Financial Accountability - HSC Master Plan
  - The panel spent a significant amount of time evaluating the financial assumptions and models, including costs, revenues, and cash flow, to assess whether they were realistic.
  - In the panel's opinion, HSC's financial models provide detailed, comprehensive data at a standard that compares quite favorably with financial models used by first tier private and public entities to undertake similar projects.
  - The financial models and the process used to prepare the data are excellent.
  - The panel's review of the financing proposed for the master plan suggests that the debt financing on the project will be very close to the limit for several years in the early phases of the project, particularly with the development of the initial large increment of research space. This is an aspect of the project that should be closely monitored.
- Financial Accountability - University Hospital Move
  - The panel believes that the hospital is reporting its financial position conservatively, and will have the capacity to undertake the move before its current schedule – perhaps as early as 2005/2006. If the move can be accelerated, there will be numerous positive impacts on HSC's research and education activities. These impacts were discussed in previous sections.
- Financial Accountability - Maintenance and Long Term Reuse of the 9<sup>th</sup> Avenue and Colorado Boulevard Campus
  - It appears to the panel that the HSC controlled maintenance program, as approved and monitored by CCHE, will allow for adequate maintenance of the campus for the near term – perhaps in the range of five to ten years. The master plan also includes several renovation and backfill projects at the campus as facilities are vacated. These renovations will extend the useful life of some of the facilities.

- However, the panel concluded that, from a financial perspective, HSC will not be able to maintain the 9<sup>th</sup> Avenue and Colorado Boulevard campus longer than the initial period in the event that the full development plan is not realized. Beyond the near term, the campus will require substantial redevelopment. Given the age of the current facilities, the campus already needs substantial reinvestment.
- Management and Oversight
  - The panel concluded that the CCHE and HSC were not designed to undertake a project of this scope, and do not currently have the resources to successfully manage the project in their present form. As was noted earlier, both CCHE and HSC staff have brought substantial focus to the project. However the panel believes that additional capacity is needed.
  - The panel recommends that the state legislature create an independent advisory board to provide the critical management and oversight capacity needed to make the Health Sciences Center a national model. The board should consist of three members with staggered terms - a member of the CCHE commission selected by the commission, the university president, and a third member from the private sector jointly nominated by the other two members and approved by the governor. The board should report to the governor.

The board should advertise nationally for a high profile director with broad experience in large-scale public/private development. The director should be a nationally regarded public entrepreneur, with expertise in public and private finance, construction management, and public contact. The director's duties would be expected to refine the current plan into a solid business strategy, frame a clear and concise vision for the project, manage day-to-day development activities, and be the public face of the development activities. The director would report to the chancellor.

**Attachment B**

**PROGRAM PLAN EVALUATION FY 2001- 02**  
**Colorado Commission on Higher Education**

<b>Project: Infrastructure</b>	<b>Institution: University of Colorado - Health Science Center at Fitzsimons</b>
<b>Original Submittal Date: July 2000</b>	<b>Revision Date:</b>
<b>Total Project Cost: \$943,000 Cur. Year</b> <b>\$124,916,985 (current est. total)</b>  <b>Phased Funding</b> <b>2001: \$943,000</b> <b>2002:</b> <b>2003:</b>  <b>New Construction Cost: \$0</b> <b>Renovated Construction Cost: \$0</b> <b>Purpose Code: A(2)</b>	<b>Total Square Footage</b> <b>New Square Footage: N/A</b> <b>Renovated Square Footage: N/A</b>  <b>New Construction Cost per Square Foot:</b> <b>\$N/A</b> <b>Renovated Cost per Square Foot:</b> <b>\$N/A</b>  <i>Comments: Reasonable costs for description of actual work</i>

**PROJECT DESCRIPTION:**

The move of the University of Colorado Health Sciences Center (UCHSC) to the Fitzsimons site requires substantial infrastructure support to achieve the long-term mission of the UCHSC. Most of the site infrastructure is 50 to 70 years old and much of the southern portion of the UCHSC property has no infrastructure. This project is the fourth phase of the infrastructure development for the site, which includes the demolition of existing, but unusable structures at Fitzsimons. Legislative funding and spending authority was received July 1, 1998, for the Phase 1 project in the amount of \$4 million. The projects in the first phase includes a main water line, and a main sanitary sewer to serve the area south of 19th Place. Legislative funding and spending authority was received for July 1, 1999, for the Phase 2 project in the amount of \$22 million. The project includes providing underground utilities for steam and condensate piping, chilled water lines, electrical lines and a large capacity redundant electrical power supply and the demolition of buildings to create space for the utilities and the new buildings. Phase 3 of the Infrastructure Development includes roadway and landscaping.

This project initially included the design and the initiation of construction of a UCHSC-owned Central Utility Plant for chilled water and steam. The plant will now be owned and constructed by a third-party contractor and leased back to the UCHSC to operate. The projects in all phases are consistent with the UCHSC/University of Colorado

Hospital (UCH) Institutional Master Plan and the UCHSC/UCH Infrastructure Master Plan.

The infrastructure to be constructed will provide the foundation for the development of the site for a new campus with modern, up-to-date, high-tech research, education and health care facilities. These systems will need to have the capacity to serve immediate and long-term needs.

**Initial CCHE Recommendations:**

- Once the ULI study is complete, the expenditure of these funds should be reevaluated based upon the study recommendations. (Study has now been completed and recommends acceleration of the project if possible.)
- The existing Phase II plan is to build the link from the existing Phase I infrastructure (which is centrally located to the campus) and connect it to the new plant location. This section basically runs east/west from the 500 Building to the new plant location.
- This particular piece of the infrastructure is dependent upon the current status of the Central Utility Plant plan. No money should be released until that scope of that project is concluded as well.
- The demolition portion of the funds could be released separately. That work could occur prior to resolution of the Central Utility Plant issues. Demolition of these buildings is justified and will occur at some point in the project.

**Attachment C**

**PROGRAM PLAN EVALUATION FY 2001- 02**  
**Colorado Commission on Higher Education**

<b>Project: Education Complex</b>	<b>Institution: University of Colorado - Health Science Center Fitzsimons</b>
<b>Original Submittal Date: July 1999</b>	<b>Revision Date: January 2000</b>
<b>Total Project Cost: \$28,415,356</b>  <b>Phased Funding</b> 2001: \$7,093,000 (\$4,094,000 appropriated to Trust Fund current year, 2001 figure \$3 million appropriated previously to Ed I A&E) 2002: \$12,227,336 2003: \$9,095,020  <b>New Construction Cost: \$15,734,236</b> <b>Renovated Construction Cost: \$0</b>	<b>Total Square Footage</b> New Square Footage: 104,055 Renovated Square Footage: 0  <b>New Construction Cost per Square Foot: \$151.21</b> <b>Renovated Cost per Square Foot: \$0</b>  <i>Comments: The cost per square foot seems relatively low for a medical facility. The more costly square footage must be offset by the sheer quantity and the combination of larger inexpensive spaces.</i>

**PROJECT DESCRIPTION:**

Project Description/History: The Education Facility will consist of 104,055 gsf and will create the initial facility to meet the educational mission for the University of Colorado Health Sciences Center (UCHSC) at the Fitzsimons campus. The facility will consist of two buildings, a primary one located in the education zone of the new campus and a smaller, approximately 21,960 gsf facility adjacent to Research Complex I. The estimated cost of the project is \$28.4 million, and it is scheduled for completion in early FY 05.

The program for the facility was designed to ensure the most efficient development of the Fitzsimons campus in its early development phase. Since it is essential that the three components of the campus mission (education, research and clinical service) ultimately exist at Fitzsimons, the education facility includes spaces that meet the needs of all three.

The education space will initially accommodate students pursuing a Medical Doctorate degree in the first two years of their education. During this period, the students are taught primarily by basic scientists. Those scientists will be located at Fitzsimons in Research Complex I. The facility also will include the Center for Studies in Clinical Performance, which will serve as an education and evaluation center for students to learn and improve

patient care techniques in a simulated clinical setting. Additionally, the space located adjacent to the Research Complex will meet the needs of the students pursuing a Ph.D. in the basic biomedical sciences.

The Education Facility program plan combines the first two education buildings from the Master Plan (Education I and II). This combination occurred to maximize building efficiency. The program plan for this project was approved by the Board of Regents in June 1999, and the first phase of the project was funded by the state legislature (\$4.093 million) contingent upon approval of the program plan by the CCHE following a review of the campus Master Plan by the Urban Land Institute.

Phase I (physical planning) will occur upon CCHE approval of the program plan following the Urban Land Institute study of the campus Master Plan, which was completed Dec. 8, 2000. A portion of the previous allocation of \$3 million capital construction funding already released to the institution will be allocated to design the program and buildings. Additionally, \$4.093 million has been allocated to this project by the state legislature and is being held in the Fitzsimons Trust Fund for the construction of the education space in Research Complex I. This allocation will be released upon completion of the ULI review and subsequent approval by CCHE.

Phase II will involve the beginning of the construction of the education space in the education zone. This will occur after the design phase and following the allocation of this year's request of \$11.7 million.

#### **CCHE Recommendations:**

Since the ULI review panel concluded the project was feasible and proceeding correctly, staff recommends the first-year funding within the Trust Fund be released immediately to the institution by the General Assembly and that the project be placed on the continuation list for funding in the FY01-02 Long Bill.

The new program plan calls for a change based upon some of the issues raised by CCHE last year. This complex will be built simultaneously and the smaller portion that is to be included within the Research I facility will go as planned. Funds previously allocated are targeted for that project, which is located on the west side of the 500 building and currently under construction.

The program plan includes a thorough evaluation of three building options in terms of heights and setbacks, and the plan efficiently evaluates the best solution for the site development.

The interior spaces follow a revised space guideline that UCHSC is developing and enhancing through its specific learning processes and expertise in medical education. Most seem well within the expected standards, and include many support situations common to a large general classroom building. There are a variety of large and medium

auditorium spaces, but the logic for these requirements seems well grounded as part of the process for beginning health profession students and their general classroom requirements.

This evaluation assumes the projected student FTE is correct in the Master Plan and program plan and that the projected student increases will occur. UCHSC is not planning significant growth in most of these areas. UCHSC has incorporated some flexibility for future expansion in all three building options.

**TOPIC: CONCEPT PAPERS**

**PREPARED BY: WILLIAM G. KUEPPER**

**I. SUMMARY**

This agenda item presents the concept paper(s) submitted to the Commission during the past month:

*M.S. in Dental Sciences at the University of Colorado Health Sciences Center*

This report includes a summary of the issues identified by CCHE staff and a copy of the concept paper. No action is required of the Commission at this time, but if the Commission wishes to have additional issues addressed or questions answered in the full proposal, these can be added to those in the staff report.

**II. BACKGROUND**

Approval by the Commission of a new degree program proposal is a two-stage process. The governing boards submit a concept paper to the Commission that provides an opportunity for the Commission to identify potential state issues prior to developing the full proposal. In contrast, the full proposal includes details about curriculum, financing, capital construction needs, and other implementation details.

**Stage 1: Concept Paper**

Before an institution develops a full proposal, the governing board or its staff shall submit a short concept paper to CCHE that outlines the proposed program goals, the basic design of the program, the market it plans to serve, and the reasons why the program is appropriate for the institution and its role and mission. CCHE policy does not require the governing board to approve the concept paper.

After the Commission staff reviews the concept paper, a staff member meets with representatives of the governing board to discuss issues and concerns related to the proposed degree. The staff presents the issues that need to be addressed in the full degree program proposal. A concept paper may be submitted by the governing board at any time and may be included on any Commission agenda.

### **Stage 2: Full Degree Proposal**

The full proposal for a new degree program reaches the Commission only after undergoing review by, and receiving approval from, the governing board. The request for new degree approval must include:

- A complete degree program proposal as defined by the governing board policy.
- The institution's responses to the peer review comments.
- Tables of enrollment projections, physical capacity estimates, and projected expense and revenue estimates.
- An analysis by the governing board of the potential quality, capacity, and cost-effectiveness of the proposed degree program.
- The governing board's response to the issues identified in the Commission's review of the concept paper.

In addition, graduate degree programs require review by an external consultant. The Commission staff selects and contacts the external consultant; the governing board staff reviews the list of potential reviewers.

Once the governing board approves a proposal, the Commission staff prepares an analysis of the proposal, an institutional profile giving additional context for the institution's capacity and market demand, and a recommendation based on the statutory criteria.

The Commission only considers degree proposals at its January or June meetings. This provides the Commission an opportunity to examine the proposals in the context of statewide need.

**TOPIC: CONCEPT PAPER: MASTER OF SCIENCE (M.S.) IN DENTAL SCIENCE AT THE UNIVERSITY OF COLORADO HEALTH SCIENCES CENTER**

**PREPARED BY: ANDREW BRECKEL III**

**I. SUMMARY**

The University of Colorado Health Sciences Center (UCHSC) has submitted a concept paper for a Master of Science (M.S.) in Dental Sciences. The proposed degree is designed to provide advanced training for the dental graduates of the University of Colorado School of Dentistry. In January 2000, UCHSC indicated that it was exploring offering a Master's Degree in Orthodontics. As a result of a new strategic plan, UCHSC decided to expand the scope of the program to a Master of Science in Dental Sciences.

**II. BACKGROUND**

The concept paper described a graduate degree program designed “to provide advanced training opportunities for the development of well trained clinicians competent to deliver advanced patient care to Colorado’s citizens.” The goal of the program is to provide UCHSC’s dental graduates with an opportunity to pursue post-graduate dental education within the State of Colorado, rather than going to other states, specifically:

- To educate dental specialists to serve Colorado’s citizens.
- To provide a source of future clinical services faculty to educate general dentists and specialists for the state.

The proposed curriculum requires 36 months of additional training. The first year of the program will focus on a “core of current basic science knowledge relevant to advanced dental practice”. “In the remaining two years, students will gain clinical teaching experience within the School of Dentistry clinics and advanced clinical patient care experiences unique to the formal disciplines of intended dental specialization. The degree requires completing a thesis that involves investigative projects.

The concept paper identified the target market for the M.S. Dental Sciences degree program as UCHSC Dental School graduates who are living in Colorado and wish to obtain dental specialty skills. The concept paper supports the need for the program stating that the demand for graduates with advanced training in dental specialties is increasing because of retirement of dental specialists.

### **III. ISSUES TO BE ADDRESSED IN THE PROPOSAL**

At the concept phase, the Commission identifies state level concerns early in the process so that the institution is fully aware of these concerns, particularly whether the proposed degree program is aligned with the institution's role and mission, duplicates existing programs, and addresses a bona fide need.

A graduate Dental Sciences degree is clearly within UCHSC's role and mission. It is less clear if the M.S. in Dental Sciences addresses a bona fide need. Current Labor Department statistics show an oversupply of dentists. The statute instructs the Commission to examine duplication in its broadest sense, including other options that are less costly to the state to meet the demand. For example, WICHE graduate agreements allow Colorado residents to enroll in degree programs offered by the other western states that Colorado does not offer.

The concept paper lists a source of future clinical faculty to educate general dentists and specialists as one of its goals. While there appears to be a documented need for dental faculty – “over 300 faculty vacancies in U.S. dental schools” – it raises some significant policy questions:

- a) What is the state's responsibility in training specialists at an institution with relatively high state general fund (i.e., \$29,610/FTE)? The Commission as the stewards of state resources needs to consider the pros and cons of each new graduate programs in a limited fiscal resource environment.
- b) The institution needs to discuss the strategy the School of Dentistry will use to attract additional dental faculty in an environment where there are reported national shortages of qualified dental faculty?
- c) The Regents need to discuss why UCHSC's newly approved Clinical Science program fails to address the need described in the concept paper. The Clinical Sciences degree program, approved by the Commission in 1995, stated that it would provide research and clinical experiences for dentists and doctors interested in becoming teaching faculty. The two programs appear to have duplicate goals, serving a relatively small number of students.

The second policy question pertains to physical capacity. With the move to Fitzsimons, UCHSC anticipates a staged transition during which existing programs will be relocated to the new facility over the next eight years. CCHE staff assume that the first priority for clinical space would be to existing degree programs and students. The Dental Sciences proposal needs to clearly document the costs of the additional clinical space needed to support a clinic-intensive program and update the Fitzsimons Facilities Program plan accordingly.

If UCHSC decides to develop a full proposal, the Dental School needs to address the policy points noted above and support argument with information on the following:

- 1) The breadth and scope of the professional area of *dental specialties* as it will be used by the School of Dentistry to develop the Master of Science in Dental Sciences.
- 2) How the curriculum differs from other Dental science specialty programs currently offered in Minnesota, Missouri, North Carolina and by other prominent dental schools.
- 3) The portion of the curriculum that will focus on research and the relationship to the areas of specialty that will be the foundation of the M.S in Dental Sciences.
- 4) The projected number of graduates who intend to specialize (e.g., Orthodontics) and the projected number that will train to become faculty that will enroll in this degree program.

**TOPIC: DEGREE PROGRAM NAME CHANGES: COLORADO SCHOOL OF MINES AND UNIVERSITY OF NORTHERN COLORADO**

**PREPARED BY: SHARON M. SAMSON**

**I. SUMMARY**

This agenda item describes the degree program name changes that the Executive Director has approved during the past month.

In November 1997, the Commission adopted a policy requiring Commission approval of name changes that involve substantive changes to the curriculum, a different target population, or expansion of the scope of the degree program. CCHE staff analyzes the impact of each submitted name change request. If non-substantive, the Executive Director approves the requested change. This agenda item serves as public confirmation of an approved name change unless the proposed action is not acceptable to the Commission.

A. Institution: Colorado School of Mines  
Current Program Name: Chemical and Petroleum Refining Engineering (B.S.)  
New Name: Chemical Engineering  
Approved: Trustees of the Colorado School of Mines (November 2000)

Rationale:

- To support the update of the curriculum to meet industry needs.

Scope of Proposed Change:

Reduction in total credit hours as per QIS priority. Positive impact on students.

Proposed Action by Executive Director:

Approve the name change as requested, effective immediately.

B.     Institution:                     University of Northern Colorado

        Current Program Name:       College Student Personnel Administration (Ph.D.)

        New Name:                     Higher Education and Student Affairs Leadership  
  (Ph.D.)

        Approved by:                 Board of Trustees of UNC (October 2000)

Rationale:

- To align the degree program name with the curricular content.
- To clearly communicate the program's goals to prospective students.

Scope of Proposed Change:

No substantive change of curriculum. No impact on students.

Proposed Action by Executive Director:

Approve the name change as requested effective 2001-2002.

**TOPIC: CCHE – CAPITAL ASSETS QUARTERLY/ANNUAL REPORT**

**PREPARED BY: JEANNE ADKINS**

**I. SUMMARY**

The Commission has delegated authority to the executive director, who has subsequently delegated authority to the director of policy and planning, to approve program plans, grant waivers from program planning, and authorize cash-funded projects within Commission guidelines and statutory authority.

This written report outlines those projects for which the director of policy and planning has waived the requirement for program plans in the calendar year 2000 as well as all spending authorizations for cash-funded or SB92-202 projects so and/or granted this year.

**II. BACKGROUND**

Statutes and CCHE policy permit CCHE to waive the requirement for a program plan on capital construction projects regardless of the source of funding, for projects under \$500,000.

Projects under \$250,000 that will use only cash or federal funds do not require referral to the General Assembly for inclusion of spending authority within the Long Bill for the fiscal year in which the institution plans to spend the funds. CCHE approval, however, is necessary before those funds can be encumbered. Generally, institutions submit the significant financial information relating to the projects and conceptual analyses of the proposed scope of work. Staff then review proposals and determines whether the information is sufficient to recommend a waiver or whether additional information needed.

Waivers granted are outlined in [Attachment A](#) for 2000.

Finally, the Commission in 1999, upon the recommendation of the Attorney General's office, redrafted its review and approval policies to conform to the statutory requirement to review higher education leases. A lease review policy now has been approved. Institutions were asked to comply wherever possible with the December 15, 2000, deadline for the final reporting period under the lease policy. However, in cases where institutions have indicated a need for more time on this initial reporting cycle, the requests have been granted.

All relevant leases and waivers submitted through the third quarter 2000 when the policy was implemented are included in this report. An updated report on leases submitted for January 2001 review will be presented in February to the commission.

No formal action is required. This report is submitted for Commission review.

**Attachments:**

[A:](#) Spreadsheet Review of waivers, cash-funded projects, SB92-202 projects and leases for Calendar Year 2000.

Colorado Commission on Higher Education					
Cash Funded and 202 Projects Approved, Waivers and Leases Granted in 2000					
CCHE	Project	Type	Institution	Total Project Cost	Funding Sources
Approved Jan. 20-00	Student Residence/Dining Hall Reno	SB 202	University of Colorado - Boulder	\$56,083,000	CFE
Approved Jan. 11-00	Stadium Lighting	SB 202	University of Colorado - Boulder	\$850,000	CFE
Approved Jan. 24-00	Purchase of Bennett Property	Cash	University of Colorado - Colorado Springs	\$357,000	CFE
Approved April 4-00	School of Pharmacy	Cash	University of Colorado - HSC	\$355,080	CFE
Approved April 4-00	School of Dentistry	Cash	University of Colorado - HSC	\$450,000	CFE
Approved Oct. 5-00	Center for Visualization and Visual Stimulation	Cash	University of Colorado - Boulder	\$1,400,000	CFE
Approved Oct. 5-00	Fitzsimons 108 acre Land Conveyance	N/A	University of Colorado - HSC	N/A	N/A
Approved Dec. 3-00	Barbara Davis Center - Fitzsimons	Cash	University of Colorado-HSC	\$16,737,941	
			<b>Sub-Total CU System</b>	<b>\$76,233,021</b>	
Approved Jan. 25-00	CSU Transit Center	Waiver	Colorado State University	\$0	Fort Collins
Approved Feb. 10-00	Muni Lease Purchase #48-Equine Sports Medicine Mobile Unit	Cash	Colorado State University	\$291,143	CFE
Approved Dec. 3-00	Atmospheric/CIRA Research Addition	Cash	Colorado State University	\$2,400,000	CFE
Approved May 18-00	ARDEC - Linear-Move Irrigation System	Waiver	Colorado State University	\$104,286	CFE
Approved May 18-00	ERC Lab Remodel	Waiver	Colorado State University	\$106,000	CFE
Approved May 18-00	CSF Foothills Shop Renovation	Waiver	Colorado State University	\$199,800	CFE
Approved	Center for Disease Control	Waiver	Colorado State University	\$150,000	CFE

<b>May 18-00</b>					
<b>Approved May 18-00</b>	Denver Center Reno. Of Space	Waiver	<b>Colorado State University</b>	\$57,000	CFE
<b>Approved May 18-00</b>	Granby Remodel CSF District Office	Waiver	<b>Colorado State University</b>	\$85,000	CFE
<b>Approved May 18-00</b>	Plaza -Remove Road between Student Center and Library	Waiver	<b>Colorado State University</b>	\$249,000	CFE
<b>Approved May 18-00</b>	Mason St. Z Parking Lot	Waiver	<b>Colorado State University</b>	\$89,000	CFE
<b>Approved May 18-00</b>	Additional Parking - NE Corner	Waiver	<b>Colorado State University</b>	\$91,300	CFE
<b>Approved May 18-00</b>	New Parking Lot at Moby Gym	Waiver	<b>Colorado State University</b>	\$106,000	CFE
<b>Approved May 23-00</b>	Bay Farm Lease in Larimer County	Lease*	<b>Colorado State University</b>	\$5,460	CFE
<b>Approved May 23-00</b>	Sublease for Ed. Op. Ctr., Ft. Collins	Lease*	<b>Colorado State University</b>	\$6,600	CFE
<b>Approved May 15-00</b>	CSFS, Salida	Lease*	<b>Colorado State University</b>	\$11,880	CFE
<b>Approved May 15-00</b>	CSFS, La Junta	Lease*	<b>Colorado State University</b>	\$8,400	CFE
<b>Approved May 15-00</b>	CSFS, Colo. Springs	Lease*	<b>Colorado State University</b>	\$5,419	CFE
<b>Approved May 15-00</b>	Coop. Ext., Alamosa	Lease*	<b>Colorado State University</b>	\$9,600	CFE
<b>Approved May 15-00</b>	Coop. Ext., Grand Jct.	Lease*	<b>Colorado State University</b>	\$6,344	CFE
<b>Approved May 15-00</b>	Ctr. For Ed. Access, Greeley	Lease*	<b>Colorado State University</b>	\$6,000	FF
<b>Approved Oct. 10-00</b>	Natural Resources Research Center - Phase II	SB 202	<b>Colorado State University</b>	\$22,412,250	FF
<b>Approved Dec. 3-00</b>	Child Development Ctr.	Cash	<b>Fort Lewis College</b>	\$1,055,220	CFE
<b>Approved Nov. 17-00</b>	Semiconductor Growth Lab - MOCVD/Lear	Waiver	<b>Colorado State University</b>	\$494,669	CFE
<b>Approved Nov. 17-00</b>	Anatomy W117 Renovation	Waiver	<b>Colorado State University</b>	\$377,750	CFE
			<b>Sub-Total CSU System</b>	\$28,328,121	
				\$28,328,121	

<b>Approved March 1-00</b>	Sale of Space in Tramway Building	Waiver	<b>Auraria Higher Education Center</b>	\$800,000	Money to State General Fund
<b>Approved Oct. 5-00</b>	Auraria/RTD/Denver easements/parking  land exchange/light rail	SB 202	<b>Auraria Higher Education Center</b>	\$4,965,000	CFE
<b>Approved Oct. 5-00</b>	Tivoli Theater Renovation	SB 202	<b>Auraria Higher Education Center</b>	\$3-\$5 million	CFE
			<b>Sub-Total Auraria</b>	<b>\$7.9-\$10.7 million</b>	
<b>Approved Jan. 3-00</b>	Revised Parking Lot Request (SB 202)	Cash	<b>Northeastern Junior College</b>	\$230,000	CF
<b>Approved Feb. 2-00</b>	Restoration of Bloedorn Building	Cash	<b>Morgan Community College</b>	\$540,795	CF
<b>Approved April 12-00</b>	Cafeteria Repair/Upgrade	Waiver	<b>Northeastern Junior College</b>	\$225,000	CF
<b>Approved May 13-00</b>	Comprehensive Learning Center	Waiver	<b>Northeastern Junior College</b>	\$30,000	CF
<b>Approved Dec. 3-00</b>	Multipurpose Fields	Waiver	<b>Red Rocks Community College</b>	\$805,250	CF
<b>Approved June 20-00</b>	McBride Hall Remodel	Waiver	<b>Otero Junior College</b>	\$488,909	CCFE
<b>Approved June 26-00</b>	Day Care Center	Waiver	<b>Trinidad State Junior College</b>	\$40,000	\$30,000 GF
<b>Approved Oct. 31-00</b>	Perform Program Plan for E.S. French	Waiver	<b>Northeastern Junior College</b>	\$55,000	E&G
<b>Approved Oct. 31-00</b>	Telephone System	Waiver	<b>Trinidad State Junior College</b>	\$374,325	CCFE
<b>Approved Nov. 21-00</b>	Downtown Studio	Lease*	<b>Pikes Peak Community College</b>	\$190,000	E&G
<b>Approved Dec. 3-00</b>	Livestock Facility	Waiver	<b>Northeastern Junior College</b>	\$200,000	CF
<b>Approved Dec. 3-00</b>	Koshare Indian Museum	Waiver	<b>Otero Junior College</b>	\$207,456	CF
			<b>Sub-Total CCC</b>	<b>\$3,386,735</b>	
<b>Approved Aug. 16-00</b>	New Privatized Student Housing Development	SB 202	<b>University of Northern Colorado</b>	\$10,500,000	CFE
<b>Approved Dec. 3-00</b>	Rocky Mountain Cancer Rehabilitation Institute	SB 202	<b>University of Northern Colorado</b>		
<b>Approved Aug. 17-00</b>	Butler Hancock Building Addition	Cash	<b>University of Northern Colorado</b>	\$4,174,750	CFE

<b>Aug. 17-00</b>			<b>Colorado</b>		
			<b>Sub-Total UNC</b>	<b>\$16,487,146</b>	<b>\$0</b>
				<b>Sub-Total State Colleges</b>	<b>\$0</b>

CCHE Cash Funded & 202 Projects approved, Waivers & Leases Granted in 2000

<b>CCHE</b>	<b>Project</b>	<b>Type</b>	<b>Institution</b>	<b>Total Project Cost</b>	<b>Funding Sources</b>
<b>Approved Jan. 20-00</b>	Student Residence/Dining Hall Reno	SB 202	<b>University of Colorado - Boulder</b>	\$56,083,000	CFE
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<b>Approved Oct. 5-00</b>	Fitzsimons 108 acre Land Conveyance	N/A	<b>University of Colorado</b>	N/A	N/A
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<b>18-00</b>			<b>Colorado State University</b>		
<b>Approved May 18-00</b>	Denver Center Renovation Of Space	Waiver	<b>Colorado State University</b>	\$57,000	CFE
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<b>Approved Dec. 3-00</b>	Child Development Ctr.	Cash	<b>Fort Lewis College</b>	\$1,055,220	CFE
<b>Sub-Total CSU System</b>					<b>\$27,272,901</b>

CCHE	Project	Type	Institution	Total Project Cost	Funding Sources
Approved Mar 1-00	Sale of Space in Tramway Building	Waiver	Auraria Higher Education Center	\$800,000	Money to State General Fund
Approved Oct. 5-00	Auraria, RTD and Denver Easements, Parking and Land Exchange/Light Rail	SB 202	Auraria Higher Education Center	\$4,965,000	CFE
Approved Oct. 5-00	Tivoli Theater Renovation	SB 202	Auraria Higher	\$3-\$5 million	CFE
<b>Sub-Total Auraria</b>					<b>\$7.9-\$10.7 million</b>
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<b>Approved Dec. 3-00</b>	Rocky Mountain Cancer Rehabilitation Institute	SB 202	<b>University of Northern Colorado</b>	\$1,812,396	CFE
<b>Approved Aug. 17-00</b>	Butler Hancock Building Addition	Cash	<b>University of Northern Colorado</b>	\$4,174,750	CFE
<b>Sub-Total UNC</b>					<b>\$16,487,146</b>
<b>Sub-Total State Colleges</b>					<b>\$0</b>
<b>* Annual Lease Payments</b>					

**TOPIC:                   REPORT ON OUT-OF-STATE INSTRUCTION**

**PREPARED BY:       ANDREW BRECKEL III**

**I.       SUMMARY**

The Commission holds statutory responsibility to approve instruction offered out-of-state beyond the seven contiguous states. By action of the Commission in 1986 the Executive Director may act for the Commission to approve or deny requests from governing boards for approval of courses and programs to be offered by their institutions. This agenda item includes additional instruction that the Executive Director has certified as meeting the criteria for out-of-state delivery. It is sponsored by the Trustees of The State Colleges and the Board of Regents of the University of Colorado.

**II.      BACKGROUND**

Prior to 1983, instruction out-of-state was offered at will by Colorado institutions, primarily through the Extended Studies Program, but an Attorney General opinion of July 3, 1980, concluded that there was no authorizing legislation and out-of-state programs were discontinued. In 1983, the General Assembly enacted legislation that authorized non-state-funded out-of-state instruction but also required governing board approval. When the instruction is beyond the contiguous states, Commission approval is required as well.

At its meeting of May 2, 1986, the Commission delegated authority to the Executive Director to determine when out-of-state instruction beyond the contiguous states complies with statutory requirements. In June 1986, the Commission received the first notification of out-of-state instruction certified by the Executive Director. Additional approved out-of-state instruction is reported to the Commission as it is received and reviewed.

**III.     ACTION**

The Executive Director has approved the following out-of-state instruction.

The Trustees of The State Colleges has submitted a request for approval of courses to be delivered by Adams State College:

**ED 589: Mundo Mayo: The Land Where Stones Speak** to be delivered in Quintana Roo, Mexico from June 8 through June 23, 2001.

**ED 589: Mayan's of the Yucatan: History and Myth for Classroom Teachers** to be delivered in Quintana Roo, Mexico from June 8 through June 23, 2001.

**ED 589: The Maya: Cultural Studies for the Classroom** delivered in Cozumel, Belize and Roatan from March 10-31, 2001.

The Trustees of The State Colleges has submitted a request for approval of a course to be delivered by Metropolitan State College of Denver:

**BIO 488B-South Pacific Ecosystems** to be delivered in New Zealand/Fiji from December 16, 2000, through January 11, 2001.

The Board of Regents of the University of Colorado has submitted a request for approval for courses to be delivered out-of-state by the University of Colorado Health Sciences Center School of Medicine:

**6<sup>th</sup> Annual National Urology Review** to be presented in Chicago, Illinois on December 9-19, 2001.

**Evidence-Based Management of Peripheral Arterial Disease and Intermittent Claudication** a series of four programs to be presented in: Long Beach, California on February 15-17, 2001; Fort Lauderdale, Florida on March 23-25, 2001; Chicago, Illinois on June 21-23, 2001; and Boston, Massachusetts on September 14-19, 2001.

The Board of Regents of the University of Colorado request approval for an out-of-state instruction to be offered by the University of Colorado at Colorado Springs.

**SPED 491/591 Reaching the Tough to Teach Series** a five teleconference Series described as a one-year out-of-state instructional program to be offered Nationwide through the University of Georgia Interactive Teaching Network.

The Board of Regents of the University of Colorado has submitted a request for retroactive approval for an out-of-state course, which was delivered by the University of Colorado Health Sciences Center. Approval was not requested prior to the presentation and the University did not detect the oversight until they were completing their annual reports.

**3<sup>rd</sup> International Workshop on Salvage Therapy for HIV Infection** was presented in Chicago, Illinois on April 12-14, 2000.

**Appendix A**

**STATUTORY AUTHORITY**

The Commission is given responsibility for approval of out-of-state instruction beyond the contiguous states in C.R.S. 23-5-116.