

CCHE Agenda

June 1, 2000

Colorado Mountain College  
Roaring Fork Campus  
Spring Valley Center  
Glenwood Springs, Colorado  
10:00 a.m.

I. Approval of Minutes

II. Reports

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

III. Consent Items

None

IV. Action Items

- A. Programs of Excellence – Evans (15 minutes)
- B. Proposals for New Academic Degree Programs – Kuepper
  - (1) Proposal to Offer a Bachelor of Arts in Astronomy at the University of Colorado at Boulder – Kuepper (20 minutes)
  - (2) Bachelor of Science in Environmental Science and Technology at Mesa State College - Chase-Riley (20 minutes)
- C. CCHE-Technology Advancement Group Program Funding for Fiscal Year 2000/2001 – Adkins/Hum (30 minutes)
- D. Low Enrollment Program Policy and Action – Samson (15 minutes)

V. Items for Discussion and Possible Action

None

VI. Written Reports for Possible Discussion

- A. Report on Out-of-State Instruction - Breckel
- B. CCHE - Capital Assets Quarterly Report - Adkins
- C. Concept Paper
  - (1) Bachelor of Arts in Interdisciplinary Studies at Adams State College (ASC) - Lindner

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item II, A

**TOPIC: CHAIR'S REPORT**

**PREPARED BY: ALEXANDER E. BRACKEN**

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

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
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)  
June 1, 2000  
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)  
June 1, 2000  
Agenda Item IV, A

**TOPIC: PROGRAMS OF EXCELLENCE**

**PREPARED BY: JOANN EVANS**

## **I. SUMMARY**

*Program of Excellence*  
is Colorado's most prestigious academic honor. Each year the Commission seeks nominations of those programs that exemplify quality and high levels of academic performance. The designation of this honor recognizes programs that excel and demonstrate a continuing commitment to outstanding performance. The award entitles each program to five years of enhancement funding.

The governing boards nominated 35 degree programs for consideration in this year's selection process. A list of the top ten nominations selected by the external review team is included as Attachment A. An external review panel composed of noted professionals in the arts, business, engineering, health, humanities and technology, has completed its evaluation and forwarded a list of semi-finalists to the Commission sub-committee. The sub-committee will forward recommendations to the Commission for action. A hand-out available at the June Commission meeting provides a detailed funding recommendation for the new and continuing programs.

## **II. STAFF RECOMMENDATIONS**

- 1. That the Commission approve the recommendation of the sub-committee and designate the selected programs as the 2000 Programs of Excellence.**
- 2. That the Commission approve the funding recommendation for the 2000-01 fiscal year.**

## **Appendix A**

### **STATUTORY AUTHORITY**

21-1-118 (1) ...Program nominations by the governing boards shall be submitted to the commission at a time prescribed by the commission. .... "programs of excellence" means any academic program or consortium of programs of a state-supported institution of higher education that directly enrolls students and is distinguished by the quality of the educational experience that it offers and by the quality of the faculty and students it can attract.

(2) The commission, after consultation with the governing boards, shall develop and employ criteria for identifying programs of excellence in state institutions of higher education. Employing the criteria adopted, the commission shall designate programs and centers of excellence, which shall number not more than five percent of the academic programs offered in state-supported institutions of higher education. Programs of excellence designations shall be reviewed annually by the commission.

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item IV, B

**TOPIC: PROPOSALS FOR NEW ACADEMIC DEGREE PROGRAMS**

**PREPARED BY: WILLIAM G. KUEPPER**

## **I. SUMMARY**

The Commission agreed recently that academic degree program proposals would be considered only at its June and January meetings. This agenda item presents the academic degree proposals that were submitted to the Commission April 1, 2000, for action at the June Commission meeting. They are:

1. *B.A. in Astronomy at the University of Colorado at Boulder*
2. *B.S. in Environmental Science and Technology at Mesa State College*
3. *M.S. in Environmental Studies at the University of Colorado at Boulder*
4. *Ph.D. in Environmental Studies at the University of Colorado at Boulder*

Included for each proposed degree program are: the staff analysis, including a recommended action; and required table: on 1) enrollment projections, 2) physical capacity estimates (included only if additional space is required to implement the program), and 3) projected expense and revenue estimates. For graduate program proposals, the report of the external reviewer and the institution's response to that report are also included.

## **II. Background**

Approval by the Commission of a new degree program proposal is a two-stage process. The governing boards submit 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, cap construction needs, and other implementation details.

### **The 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 after the governing board staff reviews the list of potential reviewers.

Once the governing board approves a proposal and submits it to the Commission for action, the Commission staff prepares an analysis of the proposal. This will include whether issues raised by the Commission at the concept paper stage, and by other governing boards and the external reviewer have been adequately addressed in the full proposal. The analysis concludes with a recommended action.

The Commission only considers degree proposals at its January or June meetings. This is intended to provide Commission an opportunity to see the proposals in a broader context in such matters as the scope of new degree activity in the state system, governing board priorities, and statewide need.

## **Appendix A**

## **Appendix A**

### **STATUTORY AUTHORITY**

23-1-107. Duties and powers of the commission with respect to program approval, review, reduction, and discontinuance. (1) The commission shall review and approve, consistent with the role and mission and statew educational needs, the proposal for any new program before its establishment in an institution. No institution sha establish a new program without first receiving the approval of the commission. As used in this subsection (1), " program" includes any new curriculum which would lead to a new vocational or academic degree. The commission shall further define what constitutes an academic or vocational program and shall establish criteria or guidelines which programs and procedures for approval of new academic or vocational program offerings.

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item IV, B(1)

**TOPIC:                    PROPOSAL TO OFFER A BACHELOR OF ARTS IN ASTRONOMY  
                              AT THE UNIVERSITY OF COLORADO AT BOULDER**

**PREPARED BY:    WILLIAM G. KUEPPER**

## **I.    SUMMARY**

The Regents of the University of Colorado request Commission approval to offer a Bachelor of Arts degree in Astronomy at the University of Colorado at Boulder. Requiring 120 credit hours, the program is designed to "provide core training in sciences (astronomy, astrophysics, planetary sciences, and space physics)." If the Commission approves this proposal, university would accept its first majors into the program in fall 2000 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 examines several questions before acting on a new degree proposal. In the judgement of Commission staff issues raised at the concept paper stage have been adequately addressed in the full proposal. In support of approving the request are: the strength of the faculty in the Department of Astrophysical and Planetary Sciences (APS), the experience research and graduate offerings in the department, the considerable participation of APS faculty in undergraduate general education, a well-defined curriculum, and the level of interest in an undergraduate degree in astronomy shown by prospective students.

The staff recommends approving the request for a B.A. in Astronomy at CU-Boulder.

## **II.   BACKGROUND**

The University of Colorado at Boulder has proposed a new degree program, the Bachelor of Arts in Astronomy. The Board of Regents approved the proposed degree at its meeting of February 2000.

Astronomy, one of the oldest disciplines, has developed into a field spanning investigations of celestial objects from the solar system to distant stars and galaxies. It includes the fields of astrophysics, planetary science, and cosmology. The proposed Astronomy degree will provide "undergraduates with the educational and research opportunities available in a nationally renowned research department." The program will emphasize training in computing, instrumentation, optics, and image processing, and student involvement in research.

The program will be housed in the Department of Astrophysical and Planetary Sciences (APS) which currently offers both M.S. and Ph.D. degrees. The undergraduate major in Astronomy has been developed in response to the department's Strategic Plan and Program Review.

The curriculum represents the department's opportunity to "design an undergraduate major that truly is meant for the 21st century." The program will contain two tracks, Astrophysics/Physics and General Astronomy, in order to "best serve the diverse needs of our students." The former will provide theoretical and experimental preparation for those who wish to continue their studies in graduate school. The General Astronomy track is designed "to meet the needs of those who are not likely to continue to grad school in this field."

Because of the anticipated differences in the goals and interests of students enrolling in the two tracks, the curricula of the two tracks differ in both structure and content. The lower division requirements of Astrophysics/Physics have a greater emphasis on mathematics and physics, while the General Astronomy track requires more course work in astronomy and, to provide general breadth in the sciences, a minimum of seven credits in another physical science. Upper division course requirements for the Astrophysics/Physics track are split between Physics and Astronomy courses, while the General Astronomy requirements consist almost all Astronomy courses.

In addition to introducing two new Astronomy courses at the sophomore level, the program will also initiate a two-semester "senior practicum," intended to provide a framework for an independent study "capstone" experience. The practicum will offer a wide range of options for students, e.g., the Fiske Planetarium, Space Grant Rocket Program, the Small Satellite Program at CU Boulder, reflecting the diverse activities of the faculty in APS and the considerable resources available to Astronomy students.



For admission to the program, a student typically would have a strong high-school background in mathematics and science. Beyond meeting the normal CU-Boulder admission requirements, a student should have taken mathematics through algebra and pre-calculus. The B.A. in Astronomy is designed to be completed in four years by those who meet its admission requirements as Freshmen and begin taking the necessary prerequisite and co-requisite courses the first 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**

The role and mission of CU-Boulder includes the offering of a range of undergraduate programs appropriate to a major research institution. No other college or university in Colorado has a major in Astronomy and, more importantly, CU-Boulder, with the type of resources it has available, is uniquely positioned in the state to offer such a degree. All comments received from governing boards in the peer review process were supportive of this proposal.

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

No specific claims are made in the proposal as to the economic impact of the new degree. The concept paper and proposal point out the major industries and government agencies located in Colorado in which APS graduates are employed, and with which researchers and students have close ties, e.g., Ball Aerospace, Lockheed-Martin, Sun Microsystems, the National Center for Atmospheric Research (NCAR), the National Oceanic and Atmospheric Administration (NOAA), and the National Institute of Standards and Technology (NIST). Information on employment opportunities for those in Astronomy currently focuses on holders of graduate degrees. However, the staff is satisfied that the APS faculty have designed a curriculum for the B.A. that will provide its graduates with appropriate skills for employment, and that the department will assist graduates in identifying employment opportunities. The graduates will be prepared for technical careers in aerospace, computer software, data management, and instrumentation, as well as science journalism, space policy, and science education.

Demand for the program has been gauged by the number of students enrolled in a version of the proposed Astrophysics/Physics track currently being offered in the Physics department, and through surveys of students in the introductory astronomy courses. These data would appear to support the initial enrollment projections contained in the proposal, i.e., 15 students in the fall 2000.

#### **Program Quality and Resources**

The curriculum is well defined. The Commission, at the concept paper stage, asked that a clear distinction be drawn between the two tracks in the program and that has been done. The emphasis on providing research opportunities to undergraduates is a distinctive element of the proposed program. This emphasis is congruent both with CU-Boulder's undergraduate initiatives and with Commission priorities for undergraduate programs. The inclusion of a capstone experience in the senior year is a useful quality control mechanism. In addition, the Commission staff suggests that regular surveys be done of employer graduates.

No additional faculty or space will be required to teach or administer the program. The proposal estimates that it will require 3.75 FTE to teach the new program, faculty positions that are already in the departments offering the courses. The Commission staff agrees with the contention stated in the proposal, and supported by peer review comments, that the resources already available at CU-Boulder, both on and off the campus, to implement the program are unparalleled in the state.

### **IV. STAFF RECOMMENDATION**

**That the Commission approve the request of the Board of Regents of the University of Colorado to offer a Bachelor of Arts in Astronomy at the University of Colorado at Boulder.**

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item IV, B(2)

**TOPIC: BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE  
AND TECHNOLOGY AT MESA STATE COLLEGE**

**PREPARED BY: PATRICIA CHASE RILEY**

**I. SUMMARY**

The Trustees of The State Colleges in Colorado and Mesa State College request Commission approval to offer a *B.S. in Environmental Science and Technology*. The current B.S. in Environmental Restoration and Waste Management is being replaced by this new expanded program with emphasis on restoration, environmental science, and environmental science education.

Mesa anticipates an enrollment of 40 students the first year reaching 119 students in the fifth year. (Attachment Graduates of the new program are expected the first year of implementation due to the existing program. Graduate numbers dwindle in year 2 and 3 but are expected to rise to 23 graduates per year at full capacity in year nine. No additional faculty members are required at the projected enrollment. No additional space is required for the program. Annual program expenses are projected to be \$133,010 to \$206,516 from year one to year five. (Attachment B\*)

After examining the concept paper concerns, staff recommends approving the request for the B.S. in Environmental Science and Technology at Mesa State College.

**II. BACKGROUND**

The B.S. in Environmental Science and Technology will concentrate on pollution prevention, pollution control, air cleanup of contaminated sites; the environmental science emphasis will integrate the characteristics and behavior of environmental systems; and the environmental science education aspect will incorporate the training of students to teach K-12 general and environmental science.

In June 1999, the Commission reviewed the concept paper for expansion of the B.S. in Environmental Restoration and Waste Management and raised three concerns. Proposal excerpts are presented in response to statewide concerns.

1. Curriculum design differentiates this program from other similar programs currently offered in Colorado.

*Some duplication is present with existing programs in Colorado, but breadth of the proposed program is unique to Mesa and the western slope.*

Section 12(a) of the proposal states:

*Several degree programs at Colorado State University are related to Environmental Science but are more narrowly defined.*

*The University of Colorado offers an Environmental Science specialization within its Environmental Studies program, but also requires students to choose a narrowly-defined emphasis in water, biogeochemistry, or climate.*

*Within the State Colleges System, Metropolitan State College of Denver has a newly approved B.S. in Environmental Science, and Western State is proposing to establish a degree in Environmental Studies.*

Mesa serves a different geographic region while Western's proposal focuses on environmental policy and writing. Western's proposal is not duplicative but complementary.

2. Adequate internal resources are in place, including faculty, external funding opportunities, and external consultant's issues concerning faculty resources.

Mesa's current staff includes three full-time, tenure-track professors, a dean, and a science instructor, along with professors who teach closely-related courses.

Two of Mesa's professors have experience obtaining grants from EPA and National Science Foundation.

The institution did commit four additional FTE to the 1993 degree program as a condition of approval.

3. Performance standards are met for the new teacher education and certification process. (Mesa is working collaboratively with CCHE to comply with the intent of SB154).

### **III. STAFF ANALYSIS**

Staff analyzed the degree proposal according to the criteria outlined in the CCHE Policy Manual, Section I, Part B, *Policy and Procedures for the Approval of New Academic Programs in State-Supported Institutions of Higher Education in Colorado*. These criteria are:

1. To ensure that the proposed program supports the institution's role and mission.
2. To ensure that the governing board of the proposing institution has considered how this proposal fits within its priorities.
3. To ensure that there is no unnecessary duplication or proliferation of programs in the state.
4. To ensure that the program is developed in response to bona fide need.

#### **1. Role and Mission**

The mission of Mesa State College states that it is to be a "general baccalaureate and specialized graduate institution . . . shall offer liberal arts and sciences programs and a limited number of professional, technical and graduate programs". Mesa has identified the development of this program as a priority in their institutional and academic planning processes. The program proposal clearly addresses, and is complementary to, the mission and priorities of Mesa.

#### **2. Board Priorities**

The Board of Trustees' approval eliminating a narrowly focused program once the expanded proposed program approved, demonstrates program evaluation, student needs assessment, and state demands.

#### **3. Need**

Mesa states that need is demonstrated by the following evidences:

- a. Adequate enrollment in the existing program in Environmental Restoration and Waste Management.
- b. Demonstration of a documented need in Colorado and on the western slope for students with this major.

#### **4. Unnecessary Duplication**

No such programs currently exist on the western slope and the proposed program will complement existing and developing programs at other Colorado institutions.

### **IV. STAFF RECOMMENDATION**

**That the Commission approve the request to offer a B.S. in Environmental Science and Technology at Mesa State College.**

#### **Appendix A**

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## **STATUTORY AUTHORITY**

23-1-107. Duties and powers of the commission with respect to program approval, review, reduction, and discontinuance. (1) The commission shall review and approve, consistent with the role and mission and statew educational needs, the proposal for any new program before its establishment in an institution. No institution sha establish a new program without first receiving the approval of the commission. As used in this subsection (1), " program" includes any new curriculum which would lead to a new vocational or academic degree. The commission shall further define what constitutes an academic or vocational program and shall establish criteria or guidelines which programs and procedures for approval of new academic or vocational program offerings.

**\*NOTE: Attachments A and B are not available on the Web. Please e-mail us at the below address to request a copy be mailed or faxed to you.**

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item IV, C

**TOPIC: CCHE-TECHNOLOGY ADVANCEMENT GROUP PROGRAM  
FUNDING FOR FISCAL YEAR 2000/2001**

**PREPARED BY: JEANNE ADKINS AND RICK HUM**

## **I. SUMMARY**

The Colorado Advanced Technology Institute (CATI) program was transferred to CCHE on July 1, 1999, as a result of passage of HB 99-1359. This legislation provides general direction for the Advanced Technology Program and CCHE-Technology Advancement Group (CCHE-TAG). A Performance Audit of the Advanced Technology Program completed in August 1999 which included nine recommendations concerning the direction and administration of the program.

Less than a year ago, staff developed a framework for integrating the TAG programs into CCHE, meeting the expectations of the General Assembly, which tasked CCHE with reorganizing the program, and responding to the Legislative Program Audit then underway. A step-by-step process to accomplish these goals was undertaken by staff with the following objectives:

1. Create defined ways to review programs, assess their effectiveness and track program expenditures more clearly and more frequently.
2. Create additional program resources and/or redirect existing resources to continually update the TAG emphasis to focus on new technologies.
3. Create a better working relationship with industry and university partners to accomplish the legislative mission.
4. Ensure that the bulk of resources for the program were devoted to exploring and implementing new technologies that benefit Colorado residents long-term.

The Commission approved the formal Program Plan in March 2000 that provides the framework for annual program review and funding.

A Science and Technology Committee (membership is included as Attachment 1) has been created to provide direction for the CCHE-TAG program and to make recommendations to CCHE concerning funding and programmatic issues for CCHE-TAG. The Science and Technology Committee has reviewed the individual Proposed Program Plans and Budgets for the next fiscal year.

The CCHE budget for next fiscal year includes a continuation budget from the General Fund at a level similar to the current budget of \$2.9 million. The anticipated administrative costs of the CCHE-TAG program are budgeted at \$290,000. The Science and Technology Committee recommends funding 12 programs (15 were funded this year) for a total of \$2,096,955 as the initial funding in fiscal year 2000/2001. As Attachment 2 shows, that leaves \$513,993 in uncommitted funds. Attachment 3 is an outline of concepts discussed by the Science and Technology Committee for the use of these uncommitted funds. Additionally, HB 00-1430, which is awaiting action by the Governor, will create a new "Advanced Technology Fund" from the Waste Tire Fund to finance research, development and technology transfer with regard to diversion and recycling strategies. The anticipated revenues to this new Advanced Technology Fund are expected approximately \$600,000 per year. The Science and Technology Committee is energized with two sources of uncommitted funds to initiate new strategies, something that has not occurred with this program for a number of years.

## **II. BACKGROUND**

**Basis for Recommended Programs:** The Commission approved the CCHE-TAG Program Plan and selection criteria at the March 3, 2000, Commission meeting. The Science and Technology Committee developed the program selection criteria based on:

- statutory direction provided when the advanced technology program was transferred to CCHE from CATI (the Colorado Advanced Technology Institute);
- recommendations from the Advanced Technology Program Performance Audit of August 1999; and
- comments from the Universities.

The selection criteria have weighted scoring that varies for the Applied Research, Product/Process Development Commercialization programs. The technology program areas currently funded include Information Technology, Bioscience and Advanced Materials. The Science and Technology Committee recognizes that the seed grant programs are funding new types of research on a continuing basis. But many of the centers that concentrate on specific areas of applied research, product or process development and commercialization have been funded for many years. The Committee asked that each center provide a plan for self-sufficiency that predicts how and when the center would be self-sustaining without the need for future General Fund support.

The CCHE-TAG staff solicited program proposals from seed grant programs and research centers in the technology program areas. The staff evaluated each proposed program plan and scored the programs based on the program selection criteria. Scores, the program summaries and the detailed program proposals were provided to the Science and Technology Committee for their review and recommendations. The staff scoring and Program Summaries are included as Attachment 4.

Committee Review and Discussion of each Program: To provide the Commission with a sense of the Science and Technology Committee's discussion and direction, a brief summation of the Committee's discussion and recommendations provided below. Program background, plans for fiscal year 2000/2001 and the summary budgets are included in the Summaries in Attachment 4.

### **Bioscience Programs:**

- **CBC – Colorado Bioprocessing Center:** The Committee was supportive of the CBC plan to be self-sufficient in two years. Some provisions in the proposed concept, such as moving off campus, the Committee believes need further discussion. The Committee recommended assistance to this center with advisors or assistance from incubators to help the CBC develop a business plan. Also, if the CBC has lost business because of a general perception that the centers may close with the demise of CATI, then some remedial action should be taken through implementation of a new marketing plan.
- **CIRB – Colorado Institute for Research in Biotechnology:** The Committee supports funding this seed grant program at the current level. The follow-on funding and industry support of the follow-on research should be tracked and reported annually for all seed grant programs to provide verification that the seed grants are worthy investments.
- **CRC – Colorado Ribonucleic Acid (RNA) Center:** The Committee also supports this seed grant program at a similar level. The Committee questions the need for two separate programs (CIRB and CRC) with common management. It may make sense to combine the funding of CIRB and CRC into a single program.
- **CVC – Colorado Venture Center:** The CVC has notified CCHE-TAG that they are seeking substantial private investment to create an investment pool. We are working with CVC to develop a plan that assists them through this transition. The funding for this transition can be paid from current year, unallocated funds.

### **Information Technology Programs:**

- **CAPT – Colorado Advanced Photonics Technology Center:** The CAPT Center at Lowry is in the second year of a three-year development of a world-class facility. There is a three-year capital development budget to acquire equipment and create the labs. The Committee is concerned about the financial dynamics of the program after the capital construction phase is completed. The Committee supports funding at a similar level, but also suggests that CAPT consider acquiring assistance to develop a business plan that avoids the need for more CCHE-TAG funds once the construction is complete.
- **CASI – Colorado Advanced Software Institute:** The Committee believes software development is an area of great potential for Colorado. CASI has been a consistent and quality seed grant program providing productive results and excellent educational opportunities. In the future more funding for this program may be warranted, after the analysis of follow-on funding is completed.
- **CPOP – Colorado Photonics and Optoelectronics Program:** The CPOP program has been a very successful program in the Photonics area. The success of this program led to the approval of the CAPT Center and has created a strong industry cluster in Photonics. As with other seed grant programs, the tracking of the follow-on funding trends is important. The Committee recommends funding at the current level.
- **CRTP – Colorado Rural Technology Program:** CRTP has been very successful in demonstrating the needs and advantages of telecommunications and other technology to help foster economic development in rural Colorado. This program has contributed strongly to the state-funded Multi-use Network (MNT) project that will connect all Colorado counties with broadband fiber optics. The Beanpole Bill funding is also another success of the CRTP program. With CIT implementation moving forward and the MNT and Beanpole funding, the Committee recommends only funding

for a four-month transition. The Committee would consider alternatives next year that could benefit rural Colorado especially in the area of "developing the necessary infrastructure to support distance learning, telemedicine, economic development and enhanced citizen access" as specified in the CCHE-TAG statutes.

- BTI – Boulder Technology Incubator: BTI has relocated its office to the CU-Boulder campus and is in an excellent position to work with CU in facilitating technology transfer. The Committee recommends funding to develop a technology transfer plan with CU that could potentially be expanded to all colleges and universities. BTI will also be working with the CAPT Center in developing a detailed business plan and may also be in a position to assist CBC.

#### **Advanced Materials Programs:**

- CAMI – Colorado Advanced Materials Institute: The Committee recognizes the success of CAMI in the past to attract substantial federal and industry funding as follow-on funding to this seed grant program. The Committee is concerned about the level of administrative costs supported by this program and suggests that if CAMI is not able to continue to acquire industry and other funding that would offset more of these administrative expenses, the funding from CCHE-TAG be reduced in the future.
- CCACS – Center for Commercial Applications of Combustion in Space: CCACS is a NASA Commercial Space Center located at Colorado School of Mines. The NASA support is at the \$3.5 million level a year with a pledged state match of \$125,000 and over \$200,000 annually in industry cash match. The Committee supports the continuation of Center funding at the level pledged in the NASA proposal.
- MAST – Center for Membrane Applied Science and Technology: MAST has been an interdisciplinary NSF Industry/University Cooperative Research Center. NSF has encouraged MAST to transition into a multi-university Research Center. As an enticement, NSF provided one-year provisional funding with \$10,000 more than the funding provided in the past and a \$10,000 planning grant to encourage their participation. MAST is one of the higher scoring programs using the new selection criteria and has not received all the funding previously promised by CATI. The Committee recommends funding at the same level as the past to match the one-year provisional grant from by NSF at this time. Future funding may be available from the new Advanced Technology Fund since many of the projects at MAST have environmental, waste diversion and recycling components.
- Tire-TAP – Tire Recycling Technology Assistance Program: Tire-TAP is funded from the Waste Tire Recycling Fund. This will be the second year of research grants that are joint proposals from industry-university partnerships. The Committee supports funding that uses the available funds from the Waste Tire Fund.

#### **Applied Technology Programs:**

- CmfG – Colorado Manufacturing Competitiveness: The Colorado Manufacturing Competitiveness program, as it operated in the past, does not meet the new statutory direction for CCHE-TAG. CmfG provided a new program plan, but the Committee felt that supporting a program to help manufacturing industries in the state prepare for evolving technology was not appropriate to the central technology transfer mission of CCHE-TAG. Other states have invested substantially in programs that provide manufacturing industries with technical assistance and support. There is no coordinated program in Colorado. The CmfG program through CATI was the only state-funded activity in this area. The Committee does not feel that CCHE-TAG has the directive or funding to fill this gap.
- CU-BAC – C.U. Business Advancement Center: CU-BAC has provided market research and other support to CATI and now CCHE-TAG. The Committee recommends that the program no longer get general support from CCHE-TAG. But, as needed, the CCHE-TAG staff could recommend funding research studies from CU-BAC or others. The recommendation is to move \$15,000 into an administrative budget line for Contract Services.

Finding of Substantial Completion of Current Year's Programs: The Audit of the Advance Technology program completed in August 1999 expressed concern that programs were approved for subsequent year funding before the staff could determine that the current year program was completed successfully. To implement the audit recommendations the CCHE-TAG Policy and Procedures Manual has been revised to include a third-quarter report that has each program describe the success implementing the current year program and anticipated success in the completion of the program by the end of the fiscal year. We have received third quarter progress reports from all programs and find that each program is making acceptable progress. We suggest that the funding award by the CCHE be conditioned on successful completion of this year's program as evidenced in an acceptable final set of program reports.

Unallocated Available Funding: The recommended funding table (Attachment 2) shows that there is estimated uncommitted funding totaling \$513,993 from the current funding. In addition an estimated \$600,000 that will be available next year Advanced Technology Fund created in HB 00-1430. CCHE-TAG will be developing policies for this fund, setting priorities and developing criteria for providing research funding and technology transfer.

The \$513,993 in uncommitted funding can be used for additional elements of the current CCHE-TAG program. The Committee has discussed a number of alternatives for this funding. The list of these alternatives, in priority order is included as Attachment 3. Any funding beyond the amount recommended in this plan would return to the CCHE for approval. The Science and Technology Committee would like to have any suggestions or comments the Commission has on the alternatives provided.

Intellectual Property Agreements: One of the concerns expressed by the General Assembly and in the Performance Audit was that the state has provided substantial funding to these programs and all the intellectual property has remained with universities. We have developed a concept with CU, CSU and CSM that would provide a proportionate sharing of intellectual property income in any case where the net income from a particular product or process developed through CCHE-TAG program exceeds \$1 million.

Audit Update: The State Auditor's Office asked for a six-month update on the progress that CCHE-TAG has made implementing the recommendations included in the August 1999 Performance Audit recommendations. We provided the update to the State Auditor's Office in March. We have included as Attachment 5 the audit update provided and memorandum and analysis from the State Auditor's Office stating that they recognize that significant progress has been made toward the implementation of the audit recommendations.

### **III. COMMITTEE RECOMMENDATION**

**The Science and Technology Committee recommends approval of the funding totaling \$2,096,955 for 12 programs specified in the Recommended Funding table (Attachment 2). The funding for each individual program is conditional pending successful completion of the FY 1999/2000 programs. It recommended that the Commission delegate authority to adjust any individual program amount within the total approved amount to the Executive Director, if any funds are unused.**

- Attachments: 1. [Science and Technology Committee Membership](#)  
2. [CCHE-TAG FY 2000/2001 Recommended Funding](#)  
3. [Alternatives for Available Funding](#)  
4. [Program Summaries and Scores](#)  
5. [Audit Update](#)



Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item IV, C  
Attachment 1

## **CCHE – TAG Science and Technology Committee Membership**

**Dean Quamme** MACTEC Environmental Restoration Services, LLC. Past member of CATI commission. Current member of the Colorado Commission on Higher Education

**Merc Mecure** Ph.D., CEO, CMD Optics. Founder of Ball Aerospace, very active in the Photonics industry in the state. Previous CATI Commissioner. Currently serves on the Colorado Advanced Photonics Technology Center Board.

**Jerry Donahue** President, Boulder Technology Incubator. Jerry Donahue is on the OIT Science and Technology Committee.

**Lynn Taussig** M.D., President or CEO of National Jewish Medical Research Center. A previous CATI Commissioner. Currently serves on the CVC Board. Is a member of the OIT Science and Technology Committee.

**Mary Petryszyn** Director, Denver Engineering Organization, Raytheon Systems Company, Command, Control, Communication and Information Systems.

**Rep. Ron May** Colorado Springs legislator who has headed several IT Committees and is interested in technology issues.

**Rep. Bill Swenson** Longmont legislator who served on CATI Commission and has long-term interest in technology/technology transfer issues.

**Dean M. Stevinson** Director OIT Science and Technology Commission.

Colorado Commission on Higher Education (CCHE)  
 June 1, 2000  
 Agenda Item IV, C  
 Attachment 2

CCHE - TAG FY 2000/2001 Recommended Funding					
--	--	Current FY-1999/2000 Budget	Recommended Funding for FY-2000/2001	Year to Year Change	Notes
--	Administrative Personnel	248,782	250,000	0%	--
--	Operations and other Administrative Expenses	37,735	40,000	6%	--
--	Contract Services	----- <sup>-</sup>	<u>15,000</u>	-----	(6)
--	Total Administrative Budget	286,517	290,000	1%	--
--	--	--	--	--	--
--	--	--	--	--	--
CBC	Colorado Bioprocessing Center	261,786	261,786	0%	--
CIRB	Colorado Institute for Research in Biotechnology	286,176	287,350	0%	--
CRC	Colorado Ribonucleic Acid (RNA) Center	182,989	183,200	0%	--
CVC	Colorado Venture Centers, Inc.	<u>170,730</u>	----- <sup>-</sup>	<u>-100%</u>	(1)
--	Total Bioscience Programs	901,681	732,336	-19%	--
--	--	--	--	--	--
--	--	--	--	--	--
BTI	Boulder Technology Incubator	32,500	33,000	2%	--
CAPT	Colorado Advanced Photonics Technology Center	146,000	146,155	0%	--
CASI	Colorado Advanced Software Institute	272,355	272,355	0%	--
CPCP	Colorado Photonics and	240,000	240,000	0%	--

CPOP	Optoelectronics Program	342,000	342,000	0%	
CRTP	Colorado Rural Technology Program	<u>219,517</u>	<u>26,700</u>	<u>-88%</u>	(2)
--	Total Information Technology Programs	1,012,372	820,210	-19%	--
--	--	--	--	--	--
--	--	--	--	--	--
CAMI	Colorado Advanced Materials Institute	215,465	218,000	1%	--
CCACS	Center for Commercial Applications of Combustion in Space	101,625	125,000	23%	(3)
MAST	Center for Membrane Applied Science and Technology	45,528	45,528	0%	(4)
TIRE TAP	Tire Recycling Technology Assistance Program	<u>152,200</u>	<u>155,881</u>	<u>2%</u>	--
--	Total Advance Material Programs	514,818	544,409	6%	--
--	--	--	--	--	--
--	--	--	--	--	--
CmfgC	Colorado Manufacturing Competitiveness	118,855	-	-100%	(5)
CU-BAC	C.U. Business Advancement Center	<u>15,394</u>	-----	<u>-100%</u>	(6)
--	Total Applied Technology Programs	134,249		-100%	--
--	--	--	--	--	--
--	Total Program Support Budget	2,563,120	2,096,955	-18%	--
---	--	-----	-----		--
--	Total CCHE-TAG Base Budget	2,849,637	<b>2,386,955</b>	--	--
--	--	--	--	--	--
--	Total Estimated Funding	--	<b>2,900,948</b>	--	--

--	-	--	-----	--
--	Estimated Uncommitted Funding Available	--	<b>513,993</b>	--
--	--	--	=====	--
(1)	CVC has informed us that they are converting to private financing. We are amending this year's contract to cover this transition.			
(2)	CRTP has supported small demonstration projects to assist rural communities in the development and use of telecommunications. With the implementation of MNT, the Beanpole Bill and CIT, this program is undergoing a reassessment. Future funding is possible.			
(3)	Base amount for CCACS was raised to the amount that was committed in the NASA application.			
(4)	MAST funding may increase using the new "Advanced Technology Fund".			
(5)	CmfgC, as it has operated in the past, does not meet our new statutory requirements. They have submitted a new proposal to help prepare manufacturing for new technology products. The Committee does not recommend funding.			
(6)	We have informed the CU-BAC that we will not be providing general support in the future. Instead, we have established an administrative line in the budget for Contract Services.			

CCHE-TAG Alternatives for Available Funding – Various strategies that could be developed and funded during FY 2000/2001

1. Support rural Colorado's ability to take advantage of evolving technology in the area of: "Developing the necessary infrastructure to support distance learning, telemedicine, economic development, and enhanced citizen access."
2. Pursue the concept of industry-driven technology transfer with equity acquisition (see attached outline).
3. Fund enhanced and/or additional student involvement in research projects. This could focus on under-involved populations, undergraduate students, non-technical degree-seeking students interested in technology industries, etc.
4. Establish an administrative cost area that could support business planning, consulting, marketing, technology transfer opportunities or other types of facilitation that would support and enhance the effectiveness of CCHE-TAG programs.
5. Additional funding to existing programs – let them apply with ideas.

**CCHE-TAG EQUITY SEED GRANT PROGRAM**

**Problem**

- CCHE-TAG has been directed through the recent legislative Program Audit to explore non-General Fund means of funding its programs.
- University patenting operations are typically not lucrative, often struggling to break even. "Blockbuster" winners, such as Teflon or the Hepatitis B vaccine, are few and far between. Further, significant patent royalty revenue is very "down-stream," depending, as it does, on sales of product. While CCHE-TAG will have IP agreements with the universities, our expectation of royalty revenue is limited.

**Opportunity**

1. An equity position in an emerging company will often yield a return on investment much quicker and with more liquidity than a licensing agreement. Quicker, because the market anticipates a product's success. More liquid, because shares of stock are sold or traded easily once a market exists.
2. The passage of SB 00-61 provides CCHE with the power to create a nonprofit foundation suited to hold an equity portfolio. Plans are underway to adapt the existing CATE foundation, formerly of CATI, for this purpose.
3. The passage of HB 00-1430 provides CCHE with a new source of funds, limited, however, to research in the areas of waste diversion, recycling and the environment.

**Objective**

- Build an equity portfolio from CCHE-TAG's technology investments in small, emerging, high-technology companies, such that appreciation in certain held stocks provides capitalization of the CATE foundation which may then serve as an alternative source of funding to General Fund support of CCHE-TAG.

**Approach**

1. An equity seed grant program will be structured in various technology fields. Seed grants are proven means of facilitating university-industry exchange. The key is joint participation by university and company personnel in a small, focused high-technology project with both academic and commercial potential.
2. CCHE-TAG will fund the seed grants through a grant of funds to the university directed toward the project and its principal investigator. The university will waive indirect costs as is customary on all CCHE-TAG-funded projects.
3. The company transfer to CATE and the university stock with a valuation equal to the direct funding provided to the university. The proportion of stock going to CATE and to the university will be negotiated in advance for the entire program through the master technology transfer agreement between CCHE-TAG and the universities.
4. Since CCHE-TAG's and the university's intellectual property stake in the company is "pre-paid" with equity, and because the program is relying on the company to commercialize the technology developed, the intellectual property developed under the scope of the project can belong to the company.

5. The size of the seed grants will likely be larger than the customary \$50,000 amount, sufficiently large to attract corporate interest in participation. Projects will, however, be capped at some maximum, possibly \$100,000. The duration, specified in the seed grant proposal, will likely be one or two years.
6. The program would be directed and managed by CCHE-TAG with support through an administrative contract.

## **Outcomes**

### Down Side

- No one applies. OK, TAG still has the money. Try another program idea.
- The equity doesn't mature. OK. If that occurs, the IP alternative would not have panned out either. Nothing is lost.

### Up Side

- TAG could realize substantial gain when any of the companies involved grow, whether or not that growth depends on the technology involved. Over a five-year period, our stock portfolio could be  $\$600,000 \times 5 = \$3$  million in emerging technology companies.
- TAG shows responsiveness to the State Auditor and Legislature.
- If it works, we've piloted a great model for long-term sustainability.

Colorado Commission on Higher Education (CCHE)  
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Program: CBC    Scored By: _____    Date: _____				
Program Type: Product or Process Development				
Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	15	8	10	9.0
Competitiveness - Colorado has the potential to be a leader	12	8	6	7.0
Has the potential for success and/or becoming self-supporting	12	10	10	10.0
Builds on the institutions' strengths and previous successes	10	7	7	7.0
Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	9	9	7	8.0
Has the potential for this program to take research in Colorado in a significant new direction	8	5	3	4.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	7	3	5	4.0
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		5	5	5.0
Non-duplicative of other programs, particularly at the graduate level of instruction		4	4	4.0
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	4	4	2	3.0
Federal involvement	4	3	0	1.5
Establishes centers of excellence in research and teaching, subject to annual appropriations	3	0	0	0.0

teaching, subject to annual appropriations				
Provides opportunity for rural areas of the state to economically benefit from development of technology	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
--	-----	-----	-----	-----
<b>Total Scores</b>	<b>100</b>	<b>66</b>	<b>59</b>	<b>62.5</b>

**Colorado Bioprocessing Center – CBC  
Bioscience Program**

Program Background: The Colorado Bioprocessing Center is a contract research laboratory with the mission strengthening the biotechnology industry in Colorado by providing expertise and facilities for the development of enabling technologies to improve biotechnology production processes and through education and training of students and employees of biotechnology companies. The CBC provides clients with a full range of services for the development, optimization, and scale-up of production-worthy bioprocesses from fermentation and cell culture through product recovery and purification, which help researchers turn laboratory discoveries into commercial products. Contracting with the CBC for research, development, and toll manufacturing services allows clients to supplement in-house resources and shorten their time to market without risky, long-term investment. Furthermore, student and workforce training activities produce individuals skilled in bioprocess development and operation that can meet the staffing needs of Colorado’s biotechnology industry.

Program Plan FY 2001:

Goal 1: Organizational Development

- Market the services of the Center to increase the number of clients and amount of revenue. We have discovered through conversations with contacts in the biotechnology industry and former clients that the demise of CATI has created the perception that the Colorado Bioprocessing Center has gone out of business. It is necessary to redouble our marketing efforts to counteract this incorrect view, attract potential clients, and generate sufficient revenues to achieve self-sufficiency.
- Develop a comprehensive business plan that describes the financing and operation of the Center as a self-sufficient business, i.e., without CCHE-TAG support funds.

Goal 2: Industrial Participation

- Perform contract services for a minimum of five Colorado companies.
- Increase contract revenues to build toward self-sufficiency.

Goal 3: Development of the Center’s Capabilities

- Upgrade the control and data acquisition systems in the pilot plant to increase capability and ease-of-use, and to permit remote access.
- Incorporate the ability to monitor cell mass concentrations in pilot scale bioreactors without having to physically take a sample.

Goal 4: Training in Bioprocessing

- Develop programs to provide training and support to biotechnology students and employees of biotechnology companies.



- Develop programs/experiments and provide opportunities for undergraduate and graduate students for training and bioprocess development research.
- Develop a program to provide bioprocessing training to scientists/workers in the biotechnology industry.

Budget:

Revenues		Expenses (CCHE only)	
CCHE	\$261,786	Personnel	\$ 65,481 25%
University	136,000	Operating	-0-
Federal	58,259	Programs	<u>\$196,305</u> 75%
Industry	<u>\$147,720</u>	Total (CCHE only)	\$261,786
	\$603,765		

Program: CIRB    Scored By: _____    Date: _____				
Program Type: Applied Research				
Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	13	8	8	8.0
Federal involvement	11	0	0	0.0
Has the potential for success and/or becoming self-supporting	10	7	7	7.0
Establishes centers of excellence in research and teaching, subject to annual appropriations	10	7	7	7.0
Has the potential for this program to take research in Colorado in a significant new direction	8	7	5	6.0
Builds on the institutions' strengths and previous successes	8	8	6	7.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	7	6	7	6.5
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		7	5	6.0
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	6	6	5	5.5
Competitiveness - Colorado has the potential to be a leader	6	5	5	5.0

Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	5	5	5	5.0
Non-duplicative of other programs, particularly at the graduate level of instruction		3	3	3.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
--	-----	-----	-----	-----
<b>Total Scores</b>	<b>100</b>	<b>69</b>	<b>63</b>	<b>66.0</b>

**Colorado Institute for Research in Biotechnology (CIRB)  
Bioscience Program**

Program Background: Biotechnology is a competitive and explosive area involving several rapidly advancing technologies. Colorado has extensive biotechnology resources, and commercial biotechnology holds rich promise for the State's economic future if nurtured properly and competitively. To capitalize on this promise, and to achieve a coordinating and stimulating specific biotechnology activities in the State, the Colorado Institute for Research in Biotechnology (CIRB) was established in July 1987.

The primary goal of CIRB is to integrate the biotechnology-related research activities within Colorado, with the developing academic strengths and utilizing these strengths for further development of the biotechnology industry in the State. Progress toward this goal is accomplished through industry/university cooperative seed grants, communication functions, and student training activities.

Program Plan FY 2001:

**Goal 1: Sponsor Biotechnology Seed Grants to Promote Industry/University Collaborative Research**

- Award at least eight seed grants with CIRB funds
- Receive at least \$150,000 in direct matching funds
- Engender at least \$750,000 in follow-on contracts

**Goal 2: Sponsor Communications Functions to Achieve Synergy Among the Various Academic, Industrial, and Government Biotechnology Research Groups in Colorado**

- Achieve attendance of 300 people at the Annual Colorado Biotechnology Symposium
- Co-sponsor at least two other symposia or workshops, with total attendance of over 200 people, that will help establish Colorado as a biotechnology center
- Update the CIRB Newsletter mailing list, retaining at least 1250 subscribers
- Issue the CIRB Newsletter two times per year

**Goal 3: Provide Student Training Opportunities**

- Award at least 10 CIRB fellowships
- Receive at least \$120,000 in matching fellowship funds

- Receive at least \$120,000 in matching fellowship funds
- Hold Biotechnology Internships Minisymposium, with at least 10 participating companies
- Provide matching funds for at least three student internships
- Internships to be matched with at least \$15,000

Budget:

Revenues		Expenses (CCHE only)		
CCHE	\$ 287,350	Personnel	\$ 40,170	13.9%
University	95,000	Operating	7,380	2.6%
Federal	790,000	Programs	<u>\$239,800</u>	83.5%
Industry	<u>\$ 595,000</u>	Total (CCHE only)	\$287,350	
	\$1,767,350			

Program: CRC      Scored By: _____ Date: _____				
Program Type: Applied Research				
Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	<b>13</b>	7	8	7.5
Federal involvement	<b>11</b>	0	0	0.0
Has the potential for success and/or becoming self-supporting	<b>10</b>	3	7	5.0
Establishes centers of excellence in research and teaching, subject to annual appropriations	<b>10</b>	6	7	6.5
Has the potential for this program to take research in Colorado in a significant new direction	<b>8</b>	7	6	6.5
Builds on the institutions' strengths and previous successes	<b>8</b>	6	8	7.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	<b>7</b>	6	7	6.5
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		6	5	5.5
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	<b>6</b>	6	5	5.5

Competitiveness - Colorado has the potential to be a leader	6	4	5	4.5
Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	5	4	5	4.5
Non-duplicative of other programs, particularly at the graduate level of instruction		3	3	3.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
--	-----	-----	-----	-----
<b>Total Scores</b>	<b>100</b>	<b>58</b>	<b>66</b>	<b>62.0</b>

**Colorado RNA Center (CRC)  
Bioscience Program**

Program Background: Recent discoveries in Colorado universities have shown that ribonucleic acid (RNA) molecules can catalyze reactions and selectively bind and inhibit targets. These discoveries have led to a new class of pharmaceuticals which may be used to treat viral and blood-related diseases such as hepatitis, herpes, leukemia, and AIDS. Several Colorado companies (e.g., Gilead, Prologis, Ribozyme Pharmaceuticals, Xoma Logic) are the result of these discoveries at the University of Colorado. The Colorado RNA Center (CRC) was established in July 1992 to help coordinate and catalyze RNA science and engineering throughout Colorado and to provide academic infrastructure support and technology transfer for the fledgling RNA industry.

The primary goal of CRC is to facilitate the industry/university research, training, and cooperation needed to make Colorado economically competitive in the RNA marketplace. This goal is accomplished through seed grants, small grants, communication activities, and student internships, with federal, industrial, and multi-campus involvement.

Program Plan FY 2001:

**Goal 1: Sponsor RNA Technology Seed Grants**

- Issue at least eight seed grants funded by CRC
- Receive at least \$200,000 in direct matching funds
- Engender at least \$750,000 in follow-on contracts

**Goal 2: Sponsor Biotechnology Small Grants**

- Award at least eight small grants
- Receive at least \$100,000 in matching funds

**Goal 3: Facilitate Communications Functions**

- Sponsor 14 biweekly meetings of the RNA Club
- Organize and sponsor at least six RNA technology and biotechnology seminars
- Organize and sponsor a minisymposium on RNA research, as part of the Annual Colorado Biotechnology

Symposium

- Publish at least one RNA-related article in the newsletter of the Colorado Institute for Research in Biotechnology

Goal 4: Facilitate Biotechnology Internships

- Hold an annual Biotechnology Internships Minisymposium, with at least 10 participating companies
- Facilitate at least five student internships sponsored by CRC
- Receive at least \$50,000 in matching funds

Budget:

Revenues		Expenses (CCHE only)	
CCHE	\$ 183,200	Personnel	\$ 9,210 5.0%
University	91,000	Operating	1,990 1.1%
Federal	785,000	Programs	<u>\$172,000</u> 93.9%
Industry	<u>\$ 205,000</u>	Total (CCHE only)	\$183,200
	\$1,264,200		

Program: <u>BTI</u> Scored By:_____ Date:_____				
Program Type: Commercialization				
Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	16	12	14	13.0
Competitiveness - Colorado has the potential to be a leader	12	8	7	7.5
Has the potential for success and/or becoming self-supporting	12	8	8	8.0
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	10	3	4	3.5
Has the potential for this program to take research in Colorado in a significant new direction	10	3	4	3.5
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		7	7	7.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	7	0	0	0.0
Increases effectiveness in funding through				

elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	6	5	5	5.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities		3	4	3.5
Non-duplicative of other programs, particularly at the graduate level of instruction		3	3	3.0
Builds on the institutions' strengths and previous successes	3	3	3	3.0
Establishes centers of excellence in research and teaching, subject to annual appropriations	3	0	1	0.5
Federal involvement	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
--	-----	-----	-----	-----
<b>Total Scores</b>	<b>100</b>	<b>55</b>	<b>60</b>	<b>57.5</b>

**Boulder Technology Incubator (BTI)  
Program Facilitation**

Program Background: The Boulder Technology Incubator (BTI) is internationally recognized as a Leading Tech Incubator and is the recipient of awards from the U.S. Small Business Administration and the National Incub Association. BTI has been instrumental in assisting technology based business clients in sourcing over \$500,000,000.

BTI fosters the growth of technology based, early stage businesses in Colorado. This mission is accomplished through the BTI, and is augmented by the BTI Educational Foundation and the BTI Venture Fund.

- BTI (501(c)(6) not-for-profit)—Fosters the development of viable technology businesses.
- BTI Education Foundation, (501(c)(3) non-profit)—Provides entrepreneurial research, development, and education programs.
- BTI Venture Fund, Ltd., LLC, (private investment firm)—Provides access to private investment capital.

*BTI program activities specific to the interests of CCHE-TAG include:*

- Technology transfer/commercialization outsourcing to the university community.
- Business development for university student generated businesses.
- Business laboratory internship training to business and engineering students.
- Research opportunities for university faculty/students.

Program Plan FY 2001:

Goal 1: Provide technology transfer and commercialization outsourcing to the University Technology Corporation and the University of Colorado.

Goal 2: Provide education and training in sound early stage technology business practices in a real world setting, with an associated research project in entrepreneurship.

Budget:

<u>Revenues</u>		<u>Expenses (CCHE only)</u>		
CCHE	\$ 33,000	Personnel	\$ -0-	
BTI/CORP	<u>101,448</u>	Operating	7,000	21.2%
Total	\$134,448	Programs	<u>26,000</u>	78.8%
		Total (CCHE only)	\$33,000	

Program: CAPT    Scored By: _____    Date: _____				
Program Type: Product or Process Development				
Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	15	6	6	6.0
Competitiveness - Colorado has the potential to be a leader	12	10	10	10.0
Has the potential for success and/or becoming self-supporting	12	6	7	6.5
Builds on the institutions' strengths and previous successes	10	9	10	9.5
Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	9	7	9	8.0
Has the potential for this program to take research in Colorado in a significant new direction	8	7	6	6.5
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	7	3	6	4.5
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		6	6	6.0
Non-duplicative of other programs, particularly at the graduate level of instruction		4	4	4.0

Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	4	4	4	4.0
Federal involvement	4	0	0	0.0
Establishes centers of excellence in research and teaching, subject to annual appropriations	3	0	0	0.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
--	-----	-----	-----	-----
<b>Total Scores</b>	100	62	68	65.0

**Colorado Advanced Photonics Technology Center (CAPT)  
Information Technology Program**

Program Background: The Colorado Advanced Photonics Technology (CAPT) program was instituted to facilitate growth and development of photonic technology based companies in the State of Colorado. The State identified photonic technology as a key enabling technology for a number of industries that the State wishes to c telecommunications, information storage and bio & life sciences. The CAPT program is structured to accomplish mission in four ways:

- Provide Companies with affordable access to laboratory facilities, equipment & services that expedite their ability to bring products to the market or to more effectively manufacture products that they already have.
- Provide appropriate training courses for industrial students. Cross train engineers and technicians from other disciplines for photonic-based manufacturing, provide continuing education for photonic personnel, and provide cap-stone experience for community college students.
- Provide basic photonics introductory training for factory and general personnel.
- Provide a forum for companies to further develop research oriented photonic technologies to the level of commercial viability.

Program plan FY 2001:

Objective 1: Build awareness at both a local and national level of the CAPT program and the benefits that CAPT has offer industry.

Objective 2: Bring a photonics telecommunications center on line including test & evaluation, fiber polishing and fusing capability along with training program.

Objective 3: Bring a photonics oriented environmental test capability on line to support internationally recognized level of qualification test requirements.

Objective 4: Identify, plan and start to implement micro optics fabrication and assembly capability.



Objective 5: Coordinate and/or prepare and deliver relevant short courses to industry personnel as dictated by the evolving needs of the industry.

Objective 6: To increase the Industrial Use of Resources.

Objective 7: Research.

Budget:

Revenues		Expenses (CCHE only)		
CCHE	\$171,544	Personnel	\$ 92,493	53.9%
CATI Capital	228,743	Operating	49,662	29.0%
Federal	0	Purchases	0	
Industry	<u>\$163,249</u>	Programs	<u>\$ 29,389</u>	17.1%
	\$563,685	Total (CCHE only)	\$ 171,544	

Program: CASI    Scored By: _____    Date: _____				
Program Type: Applied Research				
Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	13	8	8	8.0
Federal involvement	11	2	3	2.5
Has the potential for success and/or becoming self-supporting	10	7	7	7.0
Establishes centers of excellence in research and teaching, subject to annual appropriations	10	6	7	6.5
Has the potential for this program to take research in Colorado in a significant new direction	8	5	6	5.5
Builds on the institutions' strengths and previous successes	8	6	6	6.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	7	6	7	6.5
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		7	6	6.5
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	6	6	4	5.0

Competitiveness - Colorado has the potential to be a leader	6	4	4	4.0
Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	5	5	5	5.0
Non-duplicative of other programs, particularly at the graduate level of instruction		3	3	3.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	3	2	1	1.5
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
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<b>Total Scores</b>	<b>100</b>	<b>67</b>	<b>67</b>	<b>67.0</b>

**Colorado Advanced Software Institute (CASI)  
Information Technology Program**

**Program**

CASI is a partnership between industry, the public sector and Colorado's research universities. CASI's mission is expedite shared development and transfer of emerging knowledge in advanced software technology among C universities, industries, and public entities. CASI achieves its mission by conducting a research and a small-scale service program. The research program, CASI's main activity, involves business-need driven, small-scale Technology T Research Seed Grants and an undergraduate research program.

**Background:**

Program Plan FY 2001:

Objective 1: CASI shall maintain a healthy seed grant program.

Objective 2: CASI shall provide timely support for its seed grant program.

Objective 3: CASI shall solicit and process seed grant proposals for projects to start July 1, 2001.

Objective 4: CASI shall maintain a healthy Undergraduate Research Program.

Objective 5: CASI shall solicit and process Undergraduate Proposals.

Objective 6: CASI shall insist on hard-cash and in-kind support from business and industry.

Objective 7: CASI shall provide a matching service that will contribute to matching the needs of its business, industry, and public sector members for the purpose of establishing direct contracts between the business/industry & public entity members and the universities.

Objective 8: During FY01, CASI shall hold meetings for the purpose of the conduct of CASI business and as required by the CASI Charter.

Objective 9: CASI shall maintain its follow-on funding match.

Objective 10: CASI shall make efforts to attract additional funding through federal grants.

Budget:

Revenues		Expenses (CCHE only)		
CCHE	\$272,355	Personnel	\$ 65,837	24.2%
University	8,274	Operating	2,300	0.8%
Federal	--	Purchases	1,000	0.4%
Industry	<u>\$ 48,728</u>	Programs	<u>\$203,218</u>	74.6%
	<u>\$329,357</u>	Total (CCHE only)	<u>\$272,355</u>	

Program: CPOP    Scored By: _____    Date: _____				
Program Type: Applied Research				
Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	13	8	8	8.0
Federal involvement	11	0	0	0.0
Has the potential for success and/or becoming self-supporting	10	7	7	7.0
Establishes centers of excellence in research and teaching, subject to annual appropriations	10	5	7	6.0
Has the potential for this program to take research in Colorado in a significant new direction	8	8	6	7.0
Builds on the institutions' strengths and previous successes	8	8	8	8.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	7	7	7	7.0
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		7	6	6.5
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	6	6	4	5.0
Competitiveness: Colorado has the potential to be a	-			

Competitiveness - Colorado has the potential to be a leader	6	6	5	5.5
Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	5	5	5	5.0
Non-duplicative of other programs, particularly at the graduate level of instruction		3	3	3.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
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<b>Total Scores</b>	<b>100</b>	<b>70</b>	<b>66</b>	<b>68.0</b>

**Colorado Photonics and Optoelectronics Program (CPOP)  
Information Technology Program**

Program

Background:

The Colorado Photonics and Optoelectronics Program is a seed-grant program aimed at providing the education technology transfer needed to support and stimulate the emerging Colorado photonics industry. Seed grants help fund the research programs of Colorado university faculty members who wish to collaborate with Colorado companies in order to apply university developed technology to an industrial problem. Typically the grants provide \$30,000/year for a two-year period and provide funding for a graduate student to work on the project. A company is required to share in the cost of the project, with a small company providing \$6000/year and a large company providing \$12,000/year.

The Colorado photonics industry has more than 150 photonics companies providing the core, enabling technologies for the telecommunications, computers, medical, environmental sensing, aerospace, and materials processing industries. CPOP is a key element of the Colorado photonics cluster, producing a trained workforce and the most advanced photonics technologies.

Program plan FY 2001:

Goal 1: Focus the seed-grant program to develop a broad range of opportunities for student researchers to learn working on research projects with high potential to help Colorado photonics companies.

Goal

2:

Increase university participation in CPOP in the southern part of Colorado's Front Range high technology corridor.

Goal 3: Identify and develop fertile areas for technology transfer from Colorado universities to Colorado businesses.

Goal 4: Develop a broad recognition in Colorado of the value and opportunities associated with its photonics cluster.

Goal 5: Improve the infrastructure for Colorado's emerging photonics industry.

Budget:

Revenues Expenses (CCHE only)

CCHE	\$342,000	Personnel	\$ 80,515	23.6%
University	168,654	Operating	4,485	1.3%
Federal	0	Purchases	0	
Industry	<u>\$123,816</u>	Programs	<u>257,000</u>	75.1%
	\$634,470	Total (CCHE only)	\$342,000	

Program: CRTP Scored By: \_\_\_\_\_ Date: \_\_\_\_\_

### Program Type: Commercialization

Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	16	12	12	12.0
Competitiveness - Colorado has the potential to be a leader	12	9	10	9.5
Has the potential for success and/or becoming self-supporting	12	3	3	3.0
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	10	7	7	7.0
Has the potential for this program to take research in Colorado in a significant new direction	10	0	0	0.0
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		0	0	0.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	7	7	7	7.0
Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	6	6	6	6.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities		5	5	5.0
Non-duplicative of other programs, particularly at the graduate level of instruction		3	3	3.0
Builds on the institutions' strengths and previous successes	3	3	3	3.0

previous successes				
Establishes centers of excellence in research and teaching, subject to annual appropriations	3	0	0	0.0
Federal involvement	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	3	3	3.0
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<b>Total Scores</b>	<b>100</b>	<b>58</b>	<b>59</b>	<b>58.5</b>

**Colorado Rural Technology Program (CRTP)  
Information Technology Program**

Program Background:

The Colorado Rural Technology Program (CRTP) from its beginning, has explored ways in which economic activity rural Colorado can meet the technology-skill needs required by the rapidly growing information technology industry along the Front Range corridor. CRTP relies on the principles of grassroots planning and pragmatic application technology. By providing seed money to rural communities to assess, plan, and implement technology projects and meet locally identified development needs.

Since its inception, forty (40) communities have utilized CRTP funding to plan and implement technology project promote tourism, encourage business relocation, diffuse Internet technology among small businesses, provide opportunities for CU students through research and development, and electronically distribute local governance information and local applications.

CRTP sees that grants alone cannot bring long-term rural development. Additional outreach in the form of techno training and policy education and advocacy are also required to help rural communities adapt to the rapid changes r taking place. CRTP's next step is to enhance information technology-related educational opportunities through the Rural Technology Academy.

Program plan FY 2001:

Goal 1: CRTP has developed a partnership with seven rural community colleges and four year institutions to serve a hosts for an annual Rural Technology Academy Conference for local community leaders.

Goal 2: The CRTP Director will continue to manage the RuralTeleCon 2000 conference scheduled for October 4, 2000.

Goal 3: CRTP will continue the partnership with the Colorado Rural Development Council in offering the Rural Summit.

Goal 4: CRTP will continue to work with the Internet Masters partnership offering communities the opportunity t advance their knowledge of the Internet and then share their skills with others.

Budget:

Revenues Expenses (CCHE only)

CCHE \$219,517  
 University 56,500  
 Federal 15,000  
 Industry \$239,500  
 \$530,517

Personnel \$ 57,500 26.0%  
 Operating 2,500 1.1%  
 Purchases 0  
 Programs \$159,517 72.7%  
 Total (CCHE only) \$219,517

Program: CAMI Scored By: \_\_\_\_\_ Date: \_\_\_\_\_

Program Type: Applied Research

Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	13	10	7	8.5
Federal involvement	11	0	0	0.0
Has the potential for success and/or becoming self-supporting	10	6	7	6.5
Establishes centers of excellence in research and teaching, subject to annual appropriations	10	6	6	6.0
Has the potential for this program to take research in Colorado in a significant new direction	8	5	3	4.0
Builds on the institutions' strengths and previous successes	8	6	6	6.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	7	5	6	5.5
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		6	6	6.0
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	6	5	4	4.5
Competitiveness - Colorado has the potential to be a leader	6	4	2	3.0
Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	5	5	5	5.0

Non-duplicative of other programs, particularly at the graduate level of instruction		3	3	3.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
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<b>Total Scores</b>	<b>100</b>	<b>61</b>	<b>55</b>	<b>58.0</b>

**Colorado Advanced Materials Institute (CAMI)  
Advanced Materials Program**

Program Background: CAMI is a consortium of Colorado industry, universities and state government that provides grants to implement the TAG mission in the selected technology area of advanced materials and processes. The Director of CAMI serves as the Advanced Materials Technology Area Director for TAG and also directly administers the TIRE TAP program.

CAMI provides seed grants via a competitive Request for Proposals issued annually to qualified researchers at Colorado universities. The RFP includes a list of important materials research problems that are specifically generated by Colorado industry. These projects change each year and provide excellent opportunities for Colorado faculty and students to work on materials projects of vital concern to industry in the state.

In addition, CAMI has conceived and implemented other innovative university/industry partnership grant programs. In FY 99 CAMI generated \$1,545,942 in federal, private and university matching funds from the original state fund \$265,000.

Program Plan FY 2001:

Goal 1: Provide unique technical assistance from university expertise to Colorado technology based companies to enhance their global competitive edge.

- Under the CAMI Seed Grant Program, competitively select and award academic researchers grants of \$10k each to provide applied research to industry guided problems in advanced materials and processing.

Goal 2: Create and implement a Colorado Partnerships for Innovation program that will enable the transformation of knowledge created by Colorado's research and education enterprises into innovations that create new wealth, build strong local and state economies and improve technology education opportunities for students.

- Submit a proposal from CAMI to the National Science Foundation (NSF) to their new "Partnerships for Innovation" solicitation. Notice of intent is June 1, 2000, and proposal deadline in July 2000.

Goal 3: Provide effective transfer of advanced materials technology knowledge within the state's business and community.

- Continue to publish and distribute the CAMI newsletter (*The Materials Interface*) to the Colorado materials industry and university community. (2<sup>nd</sup> qtr. FY01).
- Provide timely announcements of new CAMI RFPs, solicitations, etc., on the CAMI web site.



- Issue press releases and news articles as needed through the CSM public relations office.

Budget:

Revenues		Expenses (CCHE only)		
CCHE	\$ 218,000	Personnel	\$151,092	69.3%
University	139,470	Operating	3,908	1.8%
Federal	1,150,000	Purchases	3,000	1.4%
Industry	<u>\$ 240,500</u>	Programs	<u>\$ 60,000</u>	27.5%
	\$1,747,970	Total (CCHE only)	\$218,000	

Program: CCACS Scored By: _____ Date: _____				
Program Type: Applied Research				
Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	13	10	10	10.0
Federal involvement	11	11	10	10.5
Has the potential for success and/or becoming self-supporting	10	6	6	6.0
Establishes centers of excellence in research and teaching, subject to annual appropriations	10	10	10	10.0
Has the potential for this program to take research in Colorado in a significant new direction	8	6	6	6.0
Builds on the institutions' strengths and previous successes	8	6	6	6.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	7	6	6	6.0
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		5	7	6.0
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	6	5	4	4.5
Competitiveness - Colorado has the potential to be a leader	6	5	4	4.5

Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	5	3	5	4.0
Non-duplicative of other programs, particularly at the graduate level of instruction		3	3	3.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
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<b>Total Scores</b>	<b>100</b>	<b>76</b>	<b>77</b>	<b>76.5</b>

**Center for Commercial Applications of Combustion in Space (CCACS)  
Advanced Materials Program**

Program Background: CCACS is a NASA Commercial Space Center (CSC) located at the Colorado School of Mines and specializing in the area of combustion-related products and processes. The mission of the center is to assist industry in developing commercial products by conducting research in combustion which takes advantage of the unique properties of space. The center was established in 1996 under a cooperative agreement with NASA at a base funding of \$1 million per year and with a pledge of \$125K per year, to be stable over the life of the NASA grant, in matching funds from CATI. The center is currently funded by NASA at a level of approximately \$3.5 million per year, which is projected by NASA to be stable through 2006, and receives an additional \$500K from industrial and university sources.

Program Plan FY 2001:

The overall goals of the center are to conduct combustion-related research in terrestrial and space environments that lead to new and improved commercial products and processes. The research is conducted within four product focus areas:

Objective 1: Combustion and Processing

- Flame Synthesis of Ceramic Powders
- Catalytic Combustion
- Inorganic Membranes for Fuel Separation

Objective 2: Fire Safety and Suppression

- Water Mists for Halon Replacement

Objective 3: Advanced Materials

- Specialty Glasses for Optical and other Fiber Applications
- Porous Ceramics for Bone Replacement Materials
- High-Strength Diamond Cutters for the Petroleum Industry

Objective 4: Sensors and Controls

- De-Modulating Arrays for Combustion Diagnostics

Budget:

Revenues		Expenses (CCHE only)		
CCHE	\$125,000	Personnel	\$ 16,886	13.5%
University	119,103	Operating	-0-	
Federal	3,600,000	Programs	\$108,114	86.5%
Industry	<u>\$ 302,066</u>	Total (CCHE only)	\$125,000	
	\$4,146,169			

Program: MAST    Scored By: _____ Date: _____				
Program Type: Applied Research				
Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	13	10	9	9.5
Federal involvement	11	7	6	6.5
Has the potential for success and/or becoming self-supporting	10	7	5	6.0
Establishes centers of excellence in research and teaching, subject to annual appropriations	10	9	9	9.0
Has the potential for this program to take research in Colorado in a significant new direction	8	8	7	7.5
Builds on the institutions' strengths and previous successes	8	8	7	7.5
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	7	3	3	3.0
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		4	5	4.5
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	6	4	2	3.0
Competitiveness - Colorado has the potential to be a leader	6	6	4	5.0

Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	5	5	5	5.0
Non-duplicative of other programs, particularly at the graduate level of instruction		3	3	3.0
Provides opportunity for rural areas of the state to economically benefit from development of technology	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
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<b>Total Scores</b>	<b>100</b>	<b>74</b>	<b>65</b>	<b>69.5</b>

### Membrane Applied Science and Technology (MAST) Center Bioscience Program

#### Program

The Membrane Applied Science and Technology (MAST) Center is an interdisciplinary National Science Foundation/University Cooperative Research Center. The research conducted by the MAST Center focuses on the development of advanced materials for membrane separations, novel strategies for membrane fabrication and applications technologies employing membranes.

#### Background:

An Industrial Advisory Board comprised of representatives from sponsor member organizations suggests and selects the industrially relevant research projects for Center funding. Graduate and under-graduate students supported by the MAST Center receive workplace experience via the opportunity to work on thesis research problems defined and mentored by our industry sponsors. Sponsors receive timely results from 10-12 industrially relevant research projects that are being conducted simultaneously through leveraged financial support from sponsor fees, the NSF, the State of Colorado and the University of Colorado. The stability of our sponsor base reflects their long-term satisfaction with the MAST Center research results and Industrial Advisory Board membership experience.

#### Program Plan FY 2001:

- Conduct basic research and related developmental activities for the use of membrane technology in separation processes;
- Provide timely and effective technology transfer between the MAST Center and its industrial participants; and
- Promote graduate and undergraduate education and training in the membrane technology area.

#### Budget:

<u>Revenues</u>		<u>Expenses (CCHE only)</u>	
CCHE	\$200,000	Personnel	-0-
University	80,000	Operating	-0-
Federal	138,000	Programs	\$200,000 100%

Industry \$320,000  
\$738,000

Total (CCHE only) \$200,000

Program: Tire-TAP      ScoredBy: \_\_\_\_\_ Date: \_\_\_\_\_

**Program Type: Product or Process Development**

Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	15	12	12	12.0
Competitiveness - Colorado has the potential to be a leader	12	10	9	9.5
Has the potential for success and/or becoming self-supporting	12	12	12	12.0
Builds on the institutions' strengths and previous successes	10	9	8	8.5
Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	9	7	8	7.5
Has the potential for this program to take research in Colorado in a significant new direction	8	5	5	5.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities	7	5	5	5.0
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		3	5	4.0
Non-duplicative of other programs, particularly at the graduate level of instruction		4	4	4.0
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	4	4	3	3.5
Federal involvement	4	2	1	1.5
Establishes centers of excellence in research and teaching, subject to annual appropriations	3	0	0	0.0
Provides opportunity for rural areas of the state to economically benefit from development of	3	2	2	2.0

economically benefit from development of technology	3	0	0	0.0
Provides opportunities for developing the necessary infrastructure to support: distance learning, telemedicine, support economic development, enhanced citizen access	3	0	0	0.0
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<b>Total Scores</b>	100	75	74	74.5

**Tire Recycling Technology Assistance Program (TIRE-TAP)  
Advanced Materials Program**

**Program**

TIRE-TAP was conceived and is administered by CAMI to successfully implement the legislative intent in bills sponsored by Senator Ray Powers (SB-98-198) and Rep. Bill Swenson (HB 98-1176). This legislation was passed to foster research and development on tire recycling to help mitigate the enormous growing problem of waste tires Colorado.

**Background:**

TIRE-TAP is a seed grant program that awards competitive grants to university/small business teams in the state. T grants provide technical assistance from university expertise to small businesses in the state to help them develop technology for recycling waste tires into commercial, cost-effective products.

**Program Plan FY 2001:**

**Goal 1:** Provide unique technical assistance from university expertise in Colorado to small businesses in the state develop new recycling technologies for waste tires.

- Under the TIRE-TAP seed grant program, competitively select and award academic researchers grants of up to \$45k each to provide technical assistance to small Colorado business companies to help them develop new commercial products and services using waste tires.

**Goal 2:** Create a new CCHE equity-type program to implement the legislative intent of HB 00-1430 to provide research, development and technology transfer with regard to waste diversion and recycling strategies or environmental alternatives.

- Fund and implement an equity type program of seed grants that will provide technical assistance from university expertise to Colorado companies to help them develop advanced technology for commercially feasible products or services for waste diversion, recycling or environmental alternatives while creating potential revenue for CCHE.

**Budget:**

<u>Revenues</u>		<u>Expenses (CCHE only)</u>		
CCHE	\$ 155,881	Personnel	\$ 9,205	5.9%
University	134,470	Operating	11,676	7.5%
Federal	150,000	Programs	\$135,000	86.6%
Industry	<u>\$180,000</u>	Total (CCHE only)	\$155,881	
	\$620,351			

<b>Program:</b> <u>CmfgC</u> <b>Scored By:</b> _____ <b>Date:</b> _____
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## Program Type: Commercialization

Criteria	Possible Maximum Score	RCH	JJR	Average
Industry involvement	16	4	6	5.0
Competitiveness - Colorado has the potential to be a leader	12	4	4	4.0
Has the potential for success and/or becoming self-supporting	12	6	5	5.5
Considers Colorado Industry needs for technical training at the: associate, baccalaureate, graduate levels, in-service and continuing education	10	7	6	6.5
Has the potential for this program to take research in Colorado in a significant new direction	10	4	3	3.5
Provides a balance of applied research, product/process development and commercialization within a program area and within a program		2	3	2.5
Provides opportunity for rural areas of the state to economically benefit from development of technology	7	2	0	1.0
Increases effectiveness in funding through elimination of costly duplication and gaps in infrastructure that cause the misuse of state resources	6	3	3	3.0
Encourages cooperation among the institutions of higher education, local communities and other governmental entities		2	2	2.0
Non-duplicative of other programs, particularly at the graduate level of instruction		3	2	2.5
Builds on the institutions' strengths and previous successes	3	2	1	1.5
Establishes centers of excellence in research and teaching, subject to annual appropriations	3	2	2	2.0
Federal involvement	3	1	0	0.5
Provides opportunities for developing the necessary infrastructure to support: distance	3	0	0	0.0

learning, telemedicine, support economic development, enhanced citizen access				
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<b>Total Scores</b>	<b>100</b>	<b>42</b>	<b>37</b>	<b>39.5</b>

**Colorado Manufacturing Competitiveness (CMfgC)  
Applied Technology Program**

Program Background: Colorado Manufacturing Competitiveness was created to be a catalyst, coordinator and provider of seed funds for development of manufacturing resources in Colorado. The current function of CMfgC is (1) be a catalyst, champion, and provider of seed grants for developing and implementing community college and college/university team manufacturing education programs required by the Colorado and US manufacturing communities; and (2) Motivate/inspire Colorado manufacturers to adopt the practices, processes and technologies required to become and/or remain competitive in national and global markets.

Program Plan FY 2001:

Goal 1: Develop a list of technologies, processes, and practices that are critical for improved competitiveness of Colorado manufacturers, and that could be transferred from Colorado research universities and/or other research institutions into relevant community college technology and university engineering education/training programs.

Goal 2: Locate Colorado university research programs that are developing technologies, processes, and practices which would help improve the competitiveness of Colorado manufacturers.

Goal 3: Locate research programs [other universities, federal labs, etc] that are developing technologies, processes and practices which would help improve the competitiveness of Colorado manufacturers.

Goal 4: Obtain a grant from NSF from their FY2000 Solicitation for a regional center of excellence to educate technicians and engineers in manufacturing processes and other new technologies that are required by emerging companies in Colorado and the Rocky Mountain region.

Goal 5: If the results of the market research described in Goal 1 verify what we believe about the need for a development resource, we will move forward with development of the proposed Rocky Mountain Center for Competitive Products [RMCCP]. Innovation, customer focus, agility, and value-creation are the success factors engineered product companies in today's global markets. The Rocky Mountain Center for Competitive Products will provide the following services/information resources for manufacturers.

Budget:

<u>Revenues</u>		<u>Expenses (CCHE only)</u>		
CCHE	\$101,614	Personnel	\$ 28,800	28.3%
University	65,940	Operating	11,314	11.1%
Federal	100,000	Purchases	17,000	16.7%
Industry	<u>\$ 40,000</u>	Programs	<u>\$ 44,500</u>	43.8%
	\$307,554	Total (CCHE only)	\$101,614	



Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item IV, C  
Attachment 5

March 30, 2000

MEMORANDUM

TO: Rick Hum, CCHE-TAG

FROM: Heather Sanchez, Managing Legislative Auditor

RE: Six Month Follow-Up of Colorado Advanced Technology Program Performance Audit

Based on the information you provided, it appears that CCHE-TAG has made significant progress toward implementing our audit recommendations. My review indicates that CCHE-TAG has taken steps to fully implement seven of the audit recommendations, although for some of the recommendations implementation is dependent upon final approval of CCHE-TAG's policies and procedures. The full implementation of another recommendation will take place if Senate Bill 00-061 is enacted.

My review indicates that the remaining two recommendations have been partially implemented. One involves the development and tracking of performance measures which is not scheduled to begin until at least Fiscal Year 2001. In addition, CCHE-TAG still needs to develop some of the performance measures. The second involves seeking funding sources other than the General Fund. Two bills currently pending before the Legislature would give CCHE-TAG additional funds from the Waste Tire Recycling Development Cash Fund. Although CCHE-TAG reports that it plans to develop contract language ensuring that it benefits from patents or royalties from products developed using its funds, the language has not yet been developed.

Based on this evaluation, there does not appear to be a need to conduct further audit work of the CCHE-TAG program at this time. The Auditor plans to present this evaluation to the Legislative Audit Committee during its June 2000 meeting. As you are aware, the State Auditor can request additional audit work pertaining to this program in the future.

Attached is my analysis of CCHE-TAG's progress toward implementation of the audit recommendations. Thank you for your cooperation. If you have any questions, please do not hesitate to contact me at (303) 866-2051 or through e-mail at heather.sanchez@state.co.us.

**Recommendation No. 1:**

The Colorado Commission on Higher Education should request state general fund appropriations to continue a program dedicated to promoting continued and expanded opportunities for education, research, and product development in : technologies.

**Colorado Commission on Higher Education Response:**

Agree. The Colorado Commission on Higher Education, after program assessments, will request continuation funding for Technology Advancement programs within the Department of Higher Education budget request fo Fiscal Year 2001. After the internal program evaluation, which we hope to complete in November, we shou sufficient information with which to construct a budget request. We are working with the Office of State Plannin and Budgeting on this issue as well. We anticipate a report to the Joint Budget Committee on issues raisee concerning this program in December 1999. However, the existing allocation of resources needs to be care examined to ensure the state's resources are directed toward new technology arenas. This may mean that son existing programs will need to seek long-term funding sources other than the Technology Advancement dollars.

**CCHE Actions Taken through March 17, 2000:**

CCHE has requested continued General Fund support for the Technology Advancement Program. The an established in figure setting for FY01 is \$2,852,267. Updates of the current status of the program have been provided to the JBC.

**Auditor Analysis: *Implemented.*** FY01 recommended funding represents a continuation budget for the a

technology program.

**Recommendation No. 2:**

The Colorado Commission on Higher Education should develop guidelines to detail the percentage of its advanced technology grant funds that can be used by programs to cover administrative salaries and operating costs. The guidelines should consider different program types and require remaining grant funds to be used to support program efforts in research, education, and/or product development of advanced technology.

**Colorado Commission on Higher Education Response:**

Partially Agree. Development of research centers is an integral part of the statutory function of the Technology Advancement Group – the new entity within the Commission that performs the functions previously accomplished by CATI. We agree that long-term funding of salaries for such centers should be phased out. However, we do not want to preclude short-term funding for salary and administration of future centers in new technology areas on a case-by-case basis. The Technology Advancement Group will have new policies for grant recipients that detail the portion of funding that can be used for administrative functions for consideration by the Colorado Commission on Higher Education in January 2000. An internal policy decision to move in this direction has been made.

**Actions Taken through March 17, 2000:**

The current draft of the CCHE-TAG Policies and Procedures includes a policy on administrative costs. This is found on page 12 under section 4.1.3 in Attachment A. The Policies and Procedures will be reviewed and approved by the CCHE-Science and Technology Committee.

**Auditor**

**Analysis:**

***Implemented***

The proposed Policies and Procedures state that administrative costs should not exceed 25% of the state program funding. Using less than 25% for administrative costs will provide for a higher score on the program selection criteria. The 25% limitation can be waived in certain specific cases. According to a CCHE representative the Policies and Procedures will be considered by the Science and Technology Committee on April 7, 2000 and may be adopted in May 2000.

**Recommendation No. 3:**

The Colorado Commission on Higher Education should assess its funding of programs based on statutory requirements for the State's advanced technology program. The Commission should work with other agencies of state government to find other funding sources for worthwhile programs.

**Colorado Commission on Higher Education Response:**

Agree. The Commission will work cooperatively with the Department of Local Affairs, the Office of Innovation and Technology and the General Assembly to determine the most appropriate location for the Colorado Technology Program and an orderly way to ensure efforts to connect rural Colorado to new technology continue.

Concerning the Colorado Manufacturing Competitiveness Program, we agree that neither the former CATI, nor CCHE statutory missions encompass curriculum development in this manner. We will work with the State Board of Community Colleges and Occupational Schools to either incorporate this function within the CCOES administrative offices or within the Colorado First program, which designates both federal and state funds for this purpose. We hope to have resolution of this issue by January 2000.

In general we agree the primary function of funding research in new technologies to enhance the lives of Colorado residents, directing funds to enhance student educational opportunities and helping bring advanced technologies to the general marketplace should be central in the Commission's policy direction for these funds.

**CCHE Actions Taken through March 17, 2000:**

The Commission approved the Technology Advancement Group Program Plan on March 2, 2000. The Program Plan is included as Attachment B. The Statutory requirements are included in the Program Plan and have been incorporated in the weighted scoring system for the three phases of technology transfer: (1) applied research, (2) product/process development and (3) commercialization. Staff will provide the Science and Technology Committee

a recommended score for each program that presents a program plan for Fiscal Year 2001. The Committee will review these scores and advance them with a recommendation to the Commission for final approval at the June 2000 Commission meeting.

We have met with representatives of CCCOES and the Colorado Manufacturing Competitiveness Program to inform them that it is unlikely these programs will be funded in the future.

**Auditor Analysis: Implemented.** The information provided by CCHE details that it has developed policies and procedures and a specific plan for the Technology Advancement Group (TAG). TAG has developed criteria for ranking programs for state funding based on the statutory requirements for the advanced technology program. Policies and procedures also specifically detail that no curriculum development programs such as the Manufacturing Competitiveness program are eligible for funding. The draft policies and procedures will be considered by the Commission's Science and Technology Committee in April 2000 and may be formally adopted in May 2000. As detailed in its response to Recommendation 4, TAG will no longer contract on a yearly basis with CU-BAC. We specifically discussed our concerns with the funding of this program in the audit report. The decision regarding the other program whose funding we questioned, the Colorado Rural Technology Program, is still pending. According to CCHE, the program's direction is changing and it will be evaluated using the new funding criteria.

#### **Recommendation No. 4:**

The Colorado Commission on Higher Education should make funding of business incubators contingent upon the incubator promoting the transfer of technology from the academic research laboratory to the private sector through strong ties to universities.

#### **Colorado Commission on Higher Education Response:**

Agree. Technology Advancement Group members have begun meetings with the incubators to refocus the direction to meet this objective. New policies will be instituted with respect to future funding for the next fiscal year. We have asked for a self-sufficiency plan and more emphasis on working with the State's research institutions to develop products and/or technology to the marketplace in accordance with the statutory directive. We hope to present the new policy to the Commission for review and approval no later than February 2000.

#### **CCHE Actions Taken through March 17, 2000:**

The business incubators have received copies of the audit report and are aware of our intention to implement the recommendation. As a result of this discussion, the following has occurred. (1) The Boulder Technology Incubator has decided to move onto the CU-Boulder campus and will be working much more closely with CU and its technology transfer research programs. (2) The Colorado Venture Center has, by its own actions, decided to privatize their venture capital program. We agreed to help them through their transition, but that will be complete prior to December 31, 2000. (3) We have also met with the CU-Business Advancement Center and informed them that in the future CCHE-TAG would not be providing funding in the same form as in the past. There may be occasions where CCHE-TAG will contract for their services on a fee for services basis this year.

**Auditor Analysis: Implemented.** According to CCHE, the remaining incubator that receives funding has agreed to work more closely with CU-Boulder on transferring technology. The proposed policies also include a statement that "incubators without strong university ties are ineligible for CCHE-TAG funding." The proposed policy procedures may be finalized and adopted by May 2000.

#### **Recommendation No. 5:**

The Colorado Commission on Higher Education should implement a consistent and comprehensive method to oversee, evaluate, and document the performance of state-funded advanced technology programs. Additionally, this evaluation should occur prior to making future funding decisions.

#### **Colorado Commission on Higher Education Response:**

Agree. The Technology Advancement Group will undertake a program evaluation prior to the Fiscal Year 2001 budget cycle. Included in the evaluations will be an assessment of the various programs from a historical perspective. We will verify the goals and objectives that are self-reported by programs and discuss long-term plans.

All programs have been notified that no funding guarantees for the Fiscal Year 2001 program year are to be assumed. Each program will be evaluated and notice of new policies for continuation grants and new grants presented to the Commission no later than February 2000.

**CCHE Actions Taken through March 17, 2000:**

The current draft of the CCHE-TAG Policies and Procedures (Attachment A) includes performance evaluation section 6 (beginning on page 22). The drafted procedure includes a requirement for the programs to demonstrate substantial completion of their current program plans in their third quarter report. The approval of the program funding that will be done by the Commission during the last quarter of each fiscal year will be contingent satisfactory completion of the program goals and objectives as documented in the program's final report.

**Auditor**

**Analysis:**

***Implemented.***

The proposed Policies and Procedures require funded programs to provide quarterly reports to CCHE-TAG. The quarterly reviews are to include a determination as to whether the program is progressing toward the goals detailed in the program plan as well as if the expenditures and matching funds detailed in the plan are being achieved. The Policies and Procedures detail that during the third quarterly review in March CCHE-TAG staff should also determine the funded program's ability to achieve satisfactory completion of the program plan goals and objectives. This evaluation will factor into the funding recommendations for the next fiscal year. A CCHE representative informed us that the Commission's Science and Technology Committee will consider the proposed policies and procedures on April 7, 2000 and may adopt them in May 2000. A Commission staffer reports that the programs will begin submitting the required quarterly reports beginning with the third quarter (March 2000). CCHE-TAG will be using the proposed evaluation criteria to make staff recommendations for funding of the individual programs in Fiscal Year 2001.

**Recommendation No. 6:**

The Colorado Commission on Higher Education should work to develop meaningful performance measures that can be used for comparisons across programs as well as address the unique aspects of each advanced technology program.

**Colorado Commission on Higher Education Response:**

Agree. The suggested performance measures by the audit team will be discussed as well as additional measures that are program specific. We believe these performance measures should be relevant to the Office of State Planning and Budgeting and to the General Assembly as requests for future funding are made. This requires well-defined performance objectives for grant recipients. Technology Advancement Group policies will be in place for measuring achievement of new or continuing grant applicants prior to the Fiscal Year 2001 funding cycle. Each applicant will be required to submit its proposed program-specific performance objectives at the time it requests funding.

**CCHE Actions Taken through March 17, 2000:**

The Program Plan (Attachment B) includes the program goals on pages 10 and 11. The Program Plan was recommended by the Science and Technology Committee and approved by the Commission on March 2, 2000. These goals are specifically established to include and measure both output and outcomes.

**Auditor Analysis: *Partially Implemented.*** CCHE-TAG has developed four goals for the advanced technology program and all funded programs will be evaluated, in part, based on these goals. These include (1) Enhance educational opportunities at higher education institutions by providing practical, industry-driven research opportunities. (2) Enhance the institutional research infrastructure by providing support for applied research and product/process development and commercialization. (3) Provide Colorado industries with useful products and processes from the research that has been performed. (4) Create a reputation and environment that attracts business to Colorado because of its research reputation, capabilities and educated workforce. CCHE-TAG is planning to develop both output and outcome performance measures for each goal. The development of the performance measures is ongoing in some cases. CCHE-TAG reports that it will begin tracking the output related performance measures during Fiscal Year 2001. It plans to start tracking the outcome related performance measures beginning in Fiscal Year 2002.

**Recommendation No. 7:**

The Colorado Commission on Higher Education should evaluate the feasibility of expanding its funding beyond state general fund appropriations. In developing alternative funding sources, the Commission needs to ensure that it has the statutory authority to obtain funding through the methods it identifies.

**Colorado Commission on Higher Education Response:**

Agree. Technology Advancement Group staff, working with the institutions and the Attorney General's office, will begin developing a long-term plan to present to the Joint Budget Committee and the General Assembly for funding the statutory objectives. In developing this plan we will explore federal, private sector and a possible permanent funding stream for the programs beyond annual state general fund appropriations. Our timetable for completing this plan and presenting it to the Commission for discussion and approval is February 2000. We will follow up with legislators to determine whether there is interest in changing the designation of Tire-TAP funding to provide general research grants for environmental/recycling or waste disposal.

**CCHE Actions Taken through March 17, 2000:**

Two bills have been introduced in the 2000 legislative session that would continue to expand the funding from sources other than the General Fund. HB00-1167 (included as Attachment C) would allow amounts in the Waste Tire Recycling Development Cash Fund that are not used by any of the funding categories to be reallocated to another funding category. See page 6 line 13-15. Additionally, HB00-1430 (included as Attachment D) would create an Advanced Technology Fund. The funding would start at 50% of the funds available to the Economic Development Fund from the Waste Tire Recycling Development Cash Fund. This would be 25% of the annual receipts of the Waste Tire Recycling Development Cash Fund after the administrative costs of collecting the fees are deducted.

**Auditor Analysis: Partially Implemented.** CCHE-TAG reports that it is seeking funding from sources other than the General Fund. The focus is on obtaining additional funding through the Waste Tire Recycling Development Cash Fund. The two bills currently pending before the General Assembly provide CCHE-TAG with the opportunity to obtain additional funds from the Waste Tire Recycling Development Cash Fund. These extra funds must be used to either evaluate potential uses for recycled material made from waste tires or for research and development regarding waste diversion and recycling strategies or environmental alternatives. Our audit also noted other potential funding sources such as royalties resulting from patents or equity stock. CCHE-TAG reports that plans to add contract language to the Fiscal Year 2001 contracts which would ensure that CCHE-TAG receives some of the monies generated through patents, licenses, and royalties resulting from discoveries funded by CCHE-TAG. CCHE-TAG will also seek equity stock in companies developed as a result of its funding.

**Recommendation No. 8:**

The NewSuperNet Board of Directors should withhold the final distribution of funds from the sale of SuperNet Inc., until such a time that the Board of Directors, the Colorado Commission on Higher Education, and members of the General Assembly have the opportunity to examine and discuss all feasible options for the use of these moneys such as reaffirming the current distribution plan or the possibility of using the proceeds to create an endowment fund for the State's advanced technology program.

**Colorado Commission on Higher Education Response:**

Agree. Executive Director Tim Foster has requested that NewSuperNet board members delay the final distribution of the allocations to enable a discussion of this issue and allow the Audit Committee to discuss alternatives with CCHE. As a party on behalf of the former Colorado Advanced Technology Institute in NewSuperNet, CCHE will be raising this issue at the next board meeting. This is a possible resource for future funding of Technology Advancement Group programs at the institutions, which if supplemented over a time-frame could build a permanent endowment for this purpose.

**CCHE Actions Taken through March 17, 2000:**

The NewSuperNet Board did delay the final distribution of the allocations. The Higher Education institution representatives of this Board would not agree to use of all the proceeds to create an endowment fund. However, each institution did agree that the development of such an endowment was important and agreed to contribute \$100,000 apiece towards the start of this endowment. Those contributions have been received and are being carried in the CCHE donations account until an appropriate permanent funding vehicle is established (please

in the CCHE donations account until an appropriate permanent funding vehicle is established (please see Recommendation 9).

**Auditor Analysis: *Implemented*.** The distribution was held until after the release of our audit report. At that time, the NewSuperNet Board decided to go ahead with the planned distribution of the remaining \$8.7 million. Each of the institutions did agree to provide \$100,000 to start an endowment fund for the advanced technology program.

#### **Recommendation No. 9:**

The Colorado Commission on Higher Education should determine the policy direction of the State's advanced technology program and seek a funding and organizational structure that promotes the chosen policy direction. In doing this, the Commission should evaluate the need for statutory change and then seek out statutory change as necessary to implement its chosen policies.

#### **Colorado Commission on Higher Education Response:**

Agree. While the Commission agrees, not all language applicable to the original Colorado Advanced Technology Institute was transferred into the Commission statute. We believe this was a drafting oversight in creating the Office of Innovation and Technology, while transferring the educational/research functions to CCHE. We will work with the Joint Budget Committee and the General Assembly to remedy any authority to create funding streams or a non-profit entity to follow through on what we believe the General Assembly intended from testimony on HB99-1359 in both the House and the Senate. An existing, but inactive, non-profit entity exists that was originally created by CATI and which may be available for this purpose avoiding the creation of a new entity.

Once the funding strategic plan is completed and adopted by the Commission, we will seek any relevant statutory changes necessary to accommodate the change.

#### **CCHE Actions Taken through March 17, 2000:**

CCHE appreciates the Legislative Audit Committee's willingness to sponsor legislation that implements the recommendation. SB00-61 (included as Attachment E) has been approved by the Senate and is waiting for Second Reading in the House. Additionally, CCHE has confirmed that the non-profit established by CATI, the Colorado Advanced Technology Enterprise, Inc. is a current Colorado nonprofit in good standing (see Attachment F). Our counsel in the Attorney General's Office has recommended that we not restructure this organization until SB00-61 is enacted (see Attachment G).

**Auditor Analysis: *Implemented (Pending final approval of proposed legislation)*** Senate Bill 00-061 provides CCHE with the authority to incorporate nonprofit corporations for the purpose of developing technological discoveries from science and technology research. The legislation has passed both Houses and is awaiting consideration of House amendments. As reported by CCHE-TAG, a nonprofit established by CATI is still in standing. However, the Attorney General's Office has recommended that CCHE-TAG not use this nonprofit until Senate Bill 00-061 is enacted because it would provide CCHE with a firm legal basis for using nonprofits to develop technological discoveries.

**TOPIC:                   LOW ENROLLMENT PROGRAM POLICY AND ACTION**

**PREPARED BY:   SHARON M. SAMSON**

**I.   SUMMARY**

At the May 4, 2000 meeting, there was Commission consensus to postpone action on this item until the next meeting. In April the Commission heard appeals from several governing boards for short-term extensions and policy appeals. As part of the appeals discussion, the Commission clarified several points, including that (1) the baccalaureate exemption privilege is limited to five degree programs; (2) it is open to appeals for short-term extension as long as the degree program is showing evidence of the effect of prior governing board intervention; and (3) if a governing board chooses not to make the final exemption selection, the Commission will re-assume its responsibility and make the final decision. Following the Commission discussion, these clarifications were incorporated into proposed policy revisions that presented as part of this agenda item ([Attachment A](#)).

The policy change adopted on April 6, 2000, modified the number of graduates a program must have to qualify for exemption that was approved at the April Commission meeting. It affected the degree programs that the Trustees for The State Colleges and the Trustees of the University of Northern Colorado could consider for exemptions. The governing boards have confirmed the final exempted degree program list and taken other necessary actions to bring institutions into compliance with the policy (Attachment B & C\*). All institutions meet the current Discontinuance Policy guidelines.

The staff recommendation includes approval of policy changes to CCHE's Discontinuance Policy and a corrective discontinuance action that covers all low-demand degree programs that have not been exempted or discontinued by specific governing board action by May 4, 2000 ([Attachment D](#)).

**II.   ISSUES DISCUSSED**

At the April meeting, the Commission modified the policy language pertaining to qualified exemptions to read "the degree program must graduate at least three graduates in the past three years to qualify as an exemption." This minor change allowed the governing boards a slight degree of additional latitude when selecting which degree programs will be exempt.

Prior to the April Commission meeting, Metropolitan State College at Denver forwarded a list of five exempted programs and an appeal for an extension for African American Studies and a permanent exemption for its Surveying and Mapping program. After the Commission affirmed its maximum exemption limit, the Trustees for The State Colleges merged Metropolitan State College of Denver's Music and Music Performance Degree. In addition, MSCD recommended that the Trustees eliminate the Industrial and Technical Studies (B.S.) degree. Because the results of the State Colleges April 27 board meeting are not available at the time of the CCHE agenda printing, the final decision will be presented on the floor of the Commission. Anticipating that the State Trustees will support the discontinuance of Industrial and Technical Studies, MSCD reviewed its list of exempted degree programs and resubmitted a new exemption list that contains the following degree programs:

- Chicano Studies (BA)
- African American Studies (BA)
- Modern Languages (BA)
- Physics (BA/BS)
- Surveying and Mapping (BS)

With only five programs exempted, all MSCD issues are resolved and no further Commission action is required.

In addition to modifying paragraph 2 of Section 4.03.02 at the April meeting, the Commission directed staff to examine several other parts of the Discontinuance Policy, including:

- The role and responsibility of the governing boards.
- The role and authority of the Commission.
- The undergraduate exemption limit.

for clarity and specificity.

Since this was the first year that the governing boards had an opportunity to exercise their discontinuance authority, April appeals were, in essence, a test if the policy contained appropriate language to put the policy into practice. A careful consideration of the policy, staff proposes to revise sections of the Discontinuance Policy to clarify the purposes and options.

The simplest revision proposed concerns the elimination of the mandatory wait period between discussion and action (Section 4.04.03 and 4.04.04). Recently, several Commission policies have eliminated the mandatory wait period between discussion and action (e.g., Degree Approval). The two-month discussion/action sequence in the Discontinuance Policy implies that the Commission is making decisions on program appeals when in fact it is making extensions and policy appeals. The new language allows the Commission to act at the same meeting that the appeals are discussed, but elimination of the 30-day waiting period does not prevent the Commission from tabling a policy decision.

The second proposed revision (Section 4.03.02) differentiates the number of exemptions for institutions with large undergraduate enrollment and those that have smaller enrollment numbers. Large institutions (i.e., those with undergraduate FTE enrollment greater than 5,000) are allowed three exemptions. Small institutions are allowed to exercise five exemptions. FTE was selected rather than headcount because FTE factors in part-time students – equivalent of students enrolled in 30 credits per year. The new proposed exemption levels were determined in two ways. When CCHE contacted regional accrediting associations to determine what number of low-demand programs an institution reasonably sustain, the responses averaged between three and five. The second method was to examine the ratio between student FTE numbers and the number of approved degree programs. Ideally, an institution with 5,000 FTE and 50 approved degree programs would average 100 enrolled FTE students and 20 graduates per program. Five exemptions mean that six percent of the approved degrees are operating below the benchmark. Granting five exemptions means that 10 percent of the approved degree programs are operating below the benchmarks. Large institutions have larger numbers of enrolled students and potentially higher graduation numbers, regardless if the students are enrolled full-or part-time. The only factor that counters this assumption is a very high attrition rate. Under the proposed policy, the policy provides a three-year period for governing boards affected by new exemption limit to examine which of its exempted degree programs will meet the standards prior to 2003 and which may need restructuring or closure.

The third language change (Section 4.04.02) specifies the outcome if a governing board submits more than the allowable number of exemptions. With this language, the Commission communicates its conviction that the governing board has to make a final decision. However, if political complications or pragmatic barriers prevent a governing board from making a decision, the Commission notifies the governing board that it will determine which programs will exempt. Section 4.04.04 further recognizes the governing boards' responsibility by stating that if the Commission denies a filed appeal, the implied governing board decision is to discontinue the degree program.

### **III. STAFF RECOMMENDATION**

**That the Commission discontinue any degree programs that the governing boards have not discontinued exempted under their five program limit.**

**That the Commission approve the revisions to the Policy and Procedures for the Discontinuance of Academic Degrees with Low Program Demand.**



## Appendix A

### Statutory Authority

C.R.S. 23-1-107 (2) reads:

- a) The commission shall establish, after consultation with the governing boards of institutions, policies and criteria for the discontinuance of academic or vocational programs. The commission shall direct the respective governing boards of institutions, including the board of regents of the university of Colorado, discontinue an academic or vocational degree program area, as program area is defined in commission policies.
- b) The governing board of a state-supported institution of higher education directed to discontinue an academic or vocational degree program area pursuant to this subsection (2) shall have not more than four years to discontinue graduate and baccalaureate programs and not more than two years to discontinue associate programs following the commission's directive to phase out said program area.
- c) If the commission directs the governing board of an institution to discontinue an academic or vocational degree program area, and the governing board refuses to do so, the commission may require such governing board to remit to the general fund any moneys appropriated for such program area.
- d) Each governing board of the state-supported institutions of higher education shall submit to the commission a plan describing the procedures and schedule for periodic program reviews and evaluation of each academic program at each institution consistent with the role and mission of each institution. The information to be provided to the commission shall include, but shall not be limited to, the procedures for using internal and external evaluators, the sequence of such reviews, and the anticipated use of the evaluations.
- e) Prior to the discontinuance of a program, the governing boards of state institutions of higher education are directed, subject to commission approval, to develop appropriate early retirement, professional retraining, and other programs to assist faculty members who may be displaced as a result of discontinue programs.
- f) The commission shall assure that each institution has an orderly process for the phase-out of the programs.

**\*NOTE: Attachments B and C are not available on the Web. Please e-mail us at the below address to request a copy be mailed or faxed to you.**

## SECTION I

### PART G POLICY AND PROCEDURES FOR THE DISCONTINUANCE OF ACADEMIC DEGREES WITH LOW PROGRAM DEMAND

#### 1.00 Introduction

This policy specifies the Commission's expectations for academic programs with low program demand, that is, those with low student enrollment and graduation. Governing boards are responsible for taking appropriate action, including program closure, for such academic degree programs. The policy does not limit the Commission's authority to act or conduct other studies of academic degree programs that might result in program closure.

The policy applies to baccalaureate and graduate degree programs. It complements the other Commission policies that pertain to academic degree approval, including CCHE Policy I-B: *POLICY AND PROCEDURES FOR THE APPROVAL OF NEW ACADEMIC PROGRAMS IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION IN COLORADO*, and CCHE Policy I-C: *POLICIES AND PROCEDURES FOR THE REVIEW OF ACADEMIC PROGRAMS*, and CCHE Policy I-S: *POLICY AND PROCEDURES FOR THE ANNUAL FOLLOW-UP OF NEWLY APPROVED DEGREE PROGRAMS*.

#### 2.00 Statutory Authority

By statute, the Colorado Commission on Higher Education has the responsibility to define criteria and ensure that governing boards discontinue those academic degree programs that do not satisfy state criteria. The statute (C.R. 23-1-107 (2)) reads:

- a) The commission shall establish, after consultation with the governing boards of institutions, policies and criteria for the discontinuance of academic or vocational programs. The commission shall direct the respective governing boards of institutions, including the board of regents of the university of Colorado, to discontinue an academic or vocational degree program area, as program area is defined in commission policies.
- b) The governing board of a state-supported institution of higher education directed to discontinue an academic or vocational degree program area pursuant to this subsection (2) shall have not more than four years to discontinue graduate and baccalaureate programs and not more than two years to discontinue associate programs following the commission's directive to phase out said program area.
- c) If the commission directs the governing board of an institution to discontinue an academic or vocational degree program area, and the governing board refuses to do so, the commission may require such governing board to remit to the general fund any moneys appropriated for such program area.
- d) Each governing board of the state-supported institutions of higher education shall submit to the commission a report describing the procedures and schedule for periodic program reviews and evaluation of each academic program at the institution consistent with the role and mission of each institution. The information to be provided to the commission shall include, but shall not be limited to, the procedures for using internal and external evaluators, the sequence of reviews, and the anticipated use of the evaluations.
- e) Prior to the discontinuance of a program, the governing boards of state institutions of higher education are directed, subject to commission approval, to develop appropriate early retirement, professional retraining, and other programs to assist faculty members who may be displaced as a result of discontinued programs.
- f) The commission shall assure that each institution has an orderly process for the phaseout of the programs.

### 3.00 Goals, Principles, and Terminology

#### 3.01 Policy Goals

The goals of CCHE=s discontinuance policy include:

- To establish state criteria that guide the review and discontinuance of academic degree programs with low student enrollment and graduation.
- To ensure that higher education institutions have an appropriate program array that reflects state priorities and needs, specifically that the programs respond to the current market environment in Colorado.
- To reaffirm the governing boards  
= statutory responsibility to discontinue degree programs that do not meet state criteria.
- To assure that enrolled students have a reasonable opportunity to complete the degree requirements of a discontinued program.
- To foster sound academic planning by linking planning, evaluation, and budgeting decisions.

#### 3.02 Principles

The *Policy and Procedures for the Discontinuance of Academic Degree Programs With Low Program Demand* is based on the following principles:

1. A degree program consists of an approved curriculum that meets academic standards, leads to an academic degree and is approved by the Colorado Commission on Higher Education.
2. The legislature specified three levels of access to degree programs: broad access to baccalaureate degree programs, limited access to master=s degree programs, and highly selective access to doctoral degree programs.
3. The Commission is accountable to the General Assembly and the taxpayers of Colorado for wise stewardship of state resources and protecting the rights of students who pursue degree programs in the public system of higher education.
4. The governing boards are accountable to the state and the public to review degree programs regularly and discontinue those that fail to meet the state criteria.
5. An appropriate degree program array may include offering a limited number of low enrollment programs that are central to an institution=s role and mission.

#### 3.03 Evaluation Criteria and Documentation

The Commission has established degree approval criteria, one of which requires sufficient program demand. Because the programs under examination for possible discontinuance include those that exhibit nonexistent or low student demand, the evaluation of low demand programs considers other criteria that demonstrate program need:

3.03.01 Centrality of the Program to the Institution=s Role and Mission. Based on clear evidence that a degree program is critical to the institution=s fulfilling its statutory mission, an institution may exempt it from further examination and review (see Section 4.03.02).

3.03.02 Quality of Educational Experience. In this context, the success of the program=s graduates demonstrates the quality of the educational experience. A detailed, not summary, report of the program=s students showing what career path they pursued after graduation shall substantiate this factor.

3.03.03 Student Access. The Commission promotes broad access to baccalaureate programs, limited access to master=s degrees, and highly selective access to doctoral programs. In this context, convenience is an insufficient factor to justify access. Clear evidence that other degree programs cannot meet the enrolled students= needs or educational delivery mechanisms shall substantiate this factor.

3.03.04 Appropriate/Essential Duplication. A comparative analysis that highlights the way a program serves a dis- group of students or fulfills a distinctly different set of program goals shall substantiate this factor.

3.03.05 Contribution to Economic Development. A degree program may attract external funds to the institution and/or state. A three-year cost-benefit analysis comparing program costs to external funds or other financial analysis sh document this factor.

### 3.04 Definition of Policy Terms

Academic \_\_\_\_\_ year  
is the period extending from the first day of summer term of a calendar year and ending on the last day of spring term of the succeeding year.

Central to Role and Mission means those degree programs that define an institution=s statutory role and mission without which it ceases to operate as a research university, polytechnical college, liberal arts college, or community college. Usually, degree programs central to an institution=s role and mission are those programs with the highest enrollment levels.

Compatible \_\_\_\_\_ with \_\_\_\_\_ Role \_\_\_\_\_ and \_\_\_\_\_ Mission  
in this policy context means those degree programs that support the institution in meeting its mission statement but are not by themselves indispensable.

Discontinuance refers to a governing board or Commission action to formally close a degree program.

Graduation \_\_\_\_\_ number  
is defined as the number of degrees conferred under a specific program name during an academic year. A student completes the graduation requirements of two different degrees will count in the graduation numbers of both degree programs.

Phase-Out \_\_\_\_\_ Period  
is the time during which currently enrolled students may complete the degree graduation requirements for a discontinued program. Colorado statute limits this period to no more than four years for graduate and baccalaureate programs and no more than two years for associate degree programs. The phase-out period begins at the end of the academic year in which the discontinuance action occurs.

Program \_\_\_\_\_ Closure  
is defined as the official date after which students may not enroll in the degree program and the institution may not confer a diploma bearing the program name. The official date of program closure is the last day of the degree program=s allowable phase-out period.

Program \_\_\_\_\_ Need  
is demonstrated by student demand and market demand. Student demand, the number of students who enroll and graduate from a program, shows whether a program attracts sufficient numbers to justify its existence. Market demand, the undersupply of qualified individuals by job title, shows the significance of the program to Colorado=s market environment and the value of the program to the individual student.

## 4.00 Process and Procedures

### 4.01 Governing Board Policies

By October 15, 1997, governing boards will submit to the Commission their discontinuance policies. The policies will:

- Comply with the guidelines defined in this policy;
- Identify the governing board criteria that supplement the state criteria;
- Specify the governing board's discontinuance procedures;
- Specify the institution=s responsibilities during the four-year phase-out period (Section 4.02).

The Commission may accept or ask the governing board to modify its policy. The governing boards shall resub subsequent changes to board policies for Commission acceptance.

#### 4.01.02 Statutory Responsibilities During the Phase-Out Period

The Commission shall exercise its statutory responsibility to establish an orderly process for the phase-out of de programs through governing board policies. The governing board policy shall specify that the institution is accountable to implement the following process as soon as the governing board or the Commission acts to close a degree program. The governing board policy may specify additional procedures according to its bylaws and procedures.

4.01.02.01 Notify all affected students and faculty members that the program has been discontinued and will phased-out and closed.

4.01.02.02 Cease admitting new or transfer students into a discontinued program and notify the admission office of this action.

4.01.02.03 Counsel students in the discontinued program into alternative programs when completion of the program prior to the final discontinuance date is not possible.

4.01.02.04 Ensure that an institution offers the required courses of the discontinued program to the greatest extent possible before the closure date so that currently enrolled students have a reasonable opportunity to complete requirements.

4.01.02.05 Implement institutional reduction-in-force plans.

#### 4.02 Commission Identification of Degree Programs for Examination

The Commission will notify the governing boards of low demand academic degree programs, that is, those programs that fail to meet the minimum enrollment and graduation standards specified in this policy. The group of degree programs will consist of those degree programs that are under the governing board review policies and not included in the Commission's annual follow-up of newly approved degree programs.

4.02.01 CCHE staff will identify low demand academic programs by compiling a three-year history of degrees conferred and identify all degree programs that fall below the following parameters:

4.02.01.01 Baccalaureate degrees must graduate ten (10) students in the most recently reported year or a total of students in the last three years.

4.02.01.02 Masters degree programs must graduate three (3) students in the most recently reported year or a total of five (5) in the past three years.

4.02.01.03 Doctoral degree programs must graduate at least one (1) student in the most recently reported year or a total of three (3) in the last three years.

4.02.02 In November of each year CCHE staff will notify the governing boards of all degree programs that fail to meet the criteria specified in Section 4.02.01.

The Commission expects the governing boards to discontinue degree programs that fail to meet the graduation criteria for three consecutive years, unless compelling evidence exists.

#### 4.03 Governing Board Examination and Action

The governing board will review the programs forwarded by the Commission according to its approved policies and procedures.

##### 4.03.01 Governing Board Review

The governing board shall monitor all programs identified as low demand degree programs and intervene where necessary to assist the degree programs in meeting their program enrollment and graduation goals and the student productivity goals.

#### 4.03.02 Governing Board Examination

The governing board shall examine the low demand degree programs that have performed below the specified productivity criteria for three consecutive years using the criteria specified in Section 3.03 of this policy.

In keeping with the Commission's undergraduate priority, each institution may exempt ~~no more than five (5)~~ **a certain number** of low-demand baccalaureate degree programs from closure. The Commission intends this exemption privilege to address an institutional need to offer certain baccalaureate degree programs that may have low demand but are central to institution's role and mission. The exemption applies only to baccalaureate degree programs, but excludes any degree program that did not graduate at least three students in the past three years.

**To help maintain a reasonable program array at small institutions (i.e., institutions enrolling less than undergraduate FTE), a governing board may designate a maximum of five baccalaureate degree programs. All other institutions may designate a maximum of three baccalaureate degree programs, selecting those that are central to an institution's role and mission. The three-program limit for institutions becomes effective January 2001.**

A degree program carries the exempted designation until the governing board acts to remove it. As institutions adapt to the current market environment, a new academic program may supplant a degree program that once was central to institution's role and mission. The governing board may replace a degree program on the exemption list with a new program. However, a low-demand degree program replaced by another is subject to immediate governing board review if it does not meet the program demand criteria specified in Section 4.02.01.

#### 4.03.03 Governing Board Action

The point of governing board action occurs during the third year that a program graduates fewer than the minimal number of students specified in this policy. The governing board will vote whether to discontinue the degree program under examination.

#### 4.03.04 Governing Board Report

By March 31 of each year, the governing board shall identify the degree programs it discontinued and those that it did not to the Commission. If the governing board chooses not to discontinue a low demand degree program, it shall provide the Commission a summary of its position and the documentation that supports its position as specified in Section 3.03.

#### 4.04 **Action on Appeals and Exemption** ~~Commission Examination and Action.~~

**At its April meeting,** the Commission will review **appeals filed by the governing board for** low-demand degree programs that the governing board did not discontinue. ~~It will not review the baccalaureate degree programs the governing board designated under its exemption privilege.~~

4.04.01 CCHE staff shall evaluate **the appeals for one- or two-year extensions** for low demand degree programs not discontinued by the governing boards, examining **the probability that the program can meet its graduation goals** ~~context of the state and Commission priorities, and the governing board rationale.~~ CCHE staff may request additional information from the governing board staff.

#### 4.04.02

~~CCHE staff degree programs for discontinuance, and present a rationale for the recommendation to the Commission.~~ **No more than five exemptions are permitted under this policy. If a governing board chooses to submit more than the maximum number of exemptions allowed under policy, the Commission shall determine which programs are exempt.**

4.04.03 The Commission will act on discuss the staff recommendations at a regularly scheduled Commission meeting. **Prior to the action, the governing boards filing an appeal representing the degree programs under Commission review** will have an opportunity to testify before the Commission during the discussion.

~~4.04.04 The Commission will act on the programs recommended for discontinuance at its next meeting. If the Commission denies an appeal, the Commission in effect is voting to discontinue the degree program. No further action to discontinue is required by the Commission or the governing board.~~

## **5.00 Implementation of Governing Board or Commission Discontinuance**

A degree program may be closed by governing board or Commission action. The only difference between the two actions is the formal notification process. All other guidelines apply regardless of which board initiated the action. A discontinued program will enter a phase-out period, followed by discontinuance.

### **5.01 Program Discontinuance by Governing Board Action**

When a governing board discontinues a degree program, it shall notify the Commission of its action by letter and the final date it intends to confer degrees in the program. A governing board may choose to close a program sooner than the date allowed under statute, but it may not exceed the four-year statutory limitation.

It shall also notify the institution to carry out the phase-out procedures specified in the governing board's discontinuance policy immediately.

### **5.02 Program Discontinuance by Commission Action**

The Commission shall notify the governing board to discontinue a degree program immediately following its action to discontinue the program. The governing board shall carry out the Commission's decision according to the governing board's discontinuance policy and procedures.

### **5.03 Notification of Discontinuance to Other Agencies and Organizations.**

The Commission shall notify the appropriate accrediting and credentialing agencies, including WICHE and the Colorado Department of Education, of discontinued degree programs.

## **6.00 Commission Responsibilities**

### **6.01 Monitoring of Discontinued Degree Programs During the Phase-Out Period.**

6.01.01 CCHE will monitor the enrollment data submitted to the Commission to determine if the institution is following its governing board's policies regarding admission to discontinued programs.

6.01.02 CCHE staff will alert the governing board staff if its institutions are ignoring the governing board's discontinuance policies. The governing board staff is responsible for resolving the situation, including informing the institution of potential consequences for failing to follow the phase-out plan specified in policy.

6.01.03 The Commission may choose to table new degree program proposals submitted by institutions that are not in compliance with CCHE's or a governing board's discontinuance policies.

### **6.02 Monitoring of Discontinued Degree Programs After the Closure Date**

6.02.01 CCHE will monitor the enrollment and graduation of students in discontinued degree programs. It will use SURDS data, submitted to the Commission and verified by the institution, to detect whether an institution is continuing a discontinued program beyond its closure date.

6.02.02 If an institution operates a discontinued program beyond its closure date, the governing board is liable for the cost of the FTE generated by the discontinued program. The cost of an FTE for this policy shall be the institution's

cost of the FTE generated by the discontinued program. The cost of an FTE for this policy shall be the institution average General Fund per resident FTE cost (Format 30 Report) times the total FTE required to meet the de; requirements. The board will return this amount to the state through an enrollment adjustment in the next funding period.



Colorado Commission on Higher Education (CCHE)  
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 Agenda Item IV, D  
 Attachment D

Overview of Governing Board Decisions Pertaining to Low-Enrollment Degree Programs.

Table D-1: Final List of Degree Programs Exempted by the Governing Boards

Adams State College	Chemistry (BA/BS) Music (BA) Spanish (BA) Speech-Theatre (BA)
Colorado School of Mines	Geological Engineering (PE) Geophysical Engineering (PE)
Colorado State University	Bio-Agricultural Science (BS) Bio-resource/Agricultural Engineering (BS) Consumer & Family Studies (BS) Engineering Science (BS)
Fort Lewis College	Economics (BA) Philosophy (BA) Physics (BA) Southwest Studies (BA)
Metropolitan State College at Denver	African American Studies (BA) Chicano Studies (BA) Modern Languages (BA) Physics (BA/BS) Surveying and Mapping (BS)
University of Colorado at Boulder	Asian Studies (BA) Dance (BA/BFA) Italian (BA) Linguistics (BA) Russian Studies (BA)
University of Colorado at Colorado Springs	Applied Mathematics (BS) Physics (BS) Spanish (BA)

University of Colorado at Denver	French (BA) German (BA) Geology (BS) Physics (BS)
University of Northern Colorado	Black Studies (BA) Mexican American Studies (BA) French (BA) German (BA)
University of Southern Colorado	Business Economics (BS/BA) History (BA) Physics (BS)
Western State College	Economics (BA) Mathematics (BA) Music (BA) Spanish (BA)

Table D-2: Degree Programs Discontinued by the Governing Boards

Adams State College	Hispanic Southwest Studies (BA) Medical Technology (BS)
Colorado School of Mines	Engineer of Mines (PE) <sup>1</sup> Petroleum Engineer (PE) Chemical and Petroleum Refining Engineering (ME) Geophysical Engineering (ME) Metallurgical & Materials Engineering (ME) <sup>2</sup>
Colorado State University	Agricultural Journalism (BA) German (BA) French (BA) Spanish (BA) <sup>3</sup> Pathology (MS) Statistics (BS)
Fort Lewis College	General Science (BS)
Monte Vista College	...

Metropolitan State College at Denver	Technical & Industrial Administration (BS) Urban Studies (BA)
University of Colorado at Boulder	Central & East European Studies (BA) Latin American Studies (BA) Mathematical Physics (Ph.D.) Individually Structured Major (BA)
University of Colorado at Colorado Springs	None
University of Colorado at Denver	Design Studies (MS) Applied Mathematics (BS)
University of Colorado Health Sciences Center	Pathology (MS) Pharmaceutical Sciences (MS)
University of Northern Colorado	Elementary Bilingual/Bicultural (MA) Graduate Interdisciplinary Degree (Ed.S) Graduate Interdisciplinary Degree (DA/Ed.D) Music Education (MM) Science Education (MA) Special Education/Mental Retardation (MA)
University of Southern Colorado	None
Western State College	French (BA) Technology (BS)

<sup>1</sup> CSM will continue to offer Mining (BS) and Petroleum Engineer (BS).

<sup>2</sup> The three ME degree programs are merged into the MS degree programs with the same program name.

<sup>3</sup> CSU is merging the three foreign language degree programs into a single Modern Language degree program.

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item VI, A

**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 c requests from governing boards for approval of courses and programs to be offered by their institutions. This agend item includes additional instruction that the Executive Director has certified as meeting the criteria for out-of-st 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 Extende Studies Program, but an Attorney General opinion of July 3, 1980, concluded that there was no authorizing legislati and out-of-state programs were discontinued. In 1983, the General Assembly enacted legislation that a 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 w out-of-state instruction beyond the contiguous states complies with statutory requirements. In June 1986, th Commission received the first notification of out-of-state instruction certified by the Executive Director. Addit 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 a course to be delivered by Adams State College:

*SPT 559: The Dramatic Landscape of England* to be delivered in Bath, England from July 15 through August 12, 2000.

The Board of Regents of the University of Colorado has submitted a request for approval of a course to be delivered by the University of Colorado Health Sciences Center, School of Medicine:

*New Approaches to the Management of Peripheral Arterial Disease and Intermittent* to be delivered in Rosemont, Illinois on June 18, 2000.

The Board of Regents of the University of Colorado has submitted a request for approval of courses to be delivered by the University of Colorado at Boulder:

*TMUS 4433 Special Studies: Study Tour in Choral Music and*  
*TMUS 5534 Special Studies: Study Tour in Choral Music in Italy* to be offered in Italy from May 22-June 4, 2000.

## **Appendix A**

## **STATUTORY AUTHORITY**

The Commission is given responsibility for approval of out-of-state instruction beyond the contiguous states in 23-5-116.

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item VI, B

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

**PREPARED BY: JEANNE ADKINS**

## **I. SUMMARY**

The Commission has delegated authority to the executive director, who has subsequently delegated authority to 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 second quarter of 2000. No spending authorization for cash-funded or SB 202 projects sought or granted in the second quarter of this year.

## **II. BACKGROUND**

Statutes and CCHE policy permits 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 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 reviews the proposals and determines whether the information is sufficient to recommend a waiver or whether additional information is needed.

Waivers granted are outlined in Attachment A for the second quarter.

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 has been drafted, but is still being refined. Until the Capital Assets subcommittee has reviewed such a policy and the full Commission has approved it, institutions have been requested to submit waiver requests for all leases they seek to renew or modify program plan requests.

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

### Attachments:

- A:** 2<sup>nd</sup> Quarter Report on Waivers, Capital Cash-Funded Program Plan Approval
- B:** Spreadsheet Review of 1<sup>st</sup> and 2<sup>nd</sup> Quarter Projects, 2000

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item VI, B  
Attachment A

**Quarterly Report on Approved Cash Funded, SB 202 Projects, Waivers and Leases  
March 10, 2000 through May 17, 2000**

**Program Plan Waivers Granted:**

- Re-pave Phillips-Whyman Lane, Northeastern Junior College, \$43,500 (April 12, 2000)
- Kitchen/Cafeteria Repair/Upgrade, Northeastern Junior College, \$225,000 (April 12, 2000)
- Comprehensive Learning Center Remodel, Northeastern Junior College, \$30,000 (May 15, 2000)
- Agricultural Research, Development and Education Center – Linear-Move Irrigation System, Colorado State University, \$104,286 (May 10, 2000)
- Engineering Research Center Lab Remodel Room B208, Colorado State University, \$106,000 (May 10, 2000)
- Colorado State Forest Service Foothills Shop Renovation, Colorado State University, \$199,800 (May 10, 2000)
- Center for Disease Control Lab Remodel Rooms 104, 222, 224, Colorado State University, \$150,000 (May 10, 2000)
- Denver Center Renovation of Leased Space, Colorado State University, at 110 16<sup>th</sup> Street, Suite 110 in Denver, \$57,000 (May 10, 2000)
- Granby Remodel Colorado State Forest Service District Office, Colorado State University, \$85,000 (May 10, 2000)
- Plaza – Remove Road between Student Center and Morgan Library, Colorado State University, \$249,500 (May 10, 2000)
- Mason Street Z Parking Lot, Colorado State University, to pave 50 existing spaces, \$89,000 (May 10, 2000)
- Additional Parking – Northeast Corner, Colorado State University, to build 52 new parking spaces, \$91,300 (May 10, 2000)
- Construct New Parking Lot at Moby, Colorado State University, to build 54 new parking spaces, \$106,000 (May 10, 2000)

**Waiver of Plans – Lease Renewals**

- Colorado State Forest Service – Salida, Colorado State University, for 1,788 square feet of office/shop space at 7980 W. Highway 50, #1-#5 plus shop, \$11,880 annually from July 1, 2000, through June 30, 2001 (May 15, 2000)
- Colorado State Forest Service – La Junta, Colorado State University, for 1,250 square feet of office space at Town Square Mall, 208 Santa Fe, Suite 21, \$8,050 annually from July 1, 2000, through June 30, 2001 (May 15, 2000)
- Colorado State Forest Service – Colorado Springs, Colorado State University, for 448 square feet of office space at 2860 Circle Drive South, Suite 2105, \$5,418.96 annually from July 1, 2000, through June 30, 2001 (May 15, 2000)
- Colorado State Forest Service – Grand Junction, Colorado State University, for 950 square feet of state-owned office space, 222 S. Sixth St., Suite 416, \$6,118 annually from July 1, 2000, through June 30, 2001 (May 15, 2000)
- Center for Educational Access and Outreach, Educational Opportunity Center – Greeley, Colorado State University, for 600 square feet of office space at 1120 11<sup>th</sup> Avenue #203, \$6,000 annually through June 30, 2002, then to increase to \$6,300 through the end of the lease period on August 31, 2003 (May 15, 2000)
- Cooperative Extension – Grand Junction, Colorado State University, for 793 square feet of office space at 2764 Compass Dr. #236, \$6,344.04 annually from July 1, 2000, through June 30, 2001 (May 15, 2000)

2704 Compass Dr. #250, \$8,544.04 annually from July 1, 2000, through June 30, 2001 (May 15, 2000)

- Cooperative Extension – Alamosa, Colorado State University, for 2,806 square feet of office space at 801 State Avenue, Suites A and C, \$9,600 annually from July 1, 2000, through June 30, 2001 (May 15, 2000)



## Attachment B

<b>Colorado Commission on Higher Education</b> <b>Cash Funded and 202 Projects Approved, Waivers and Leases Granted</b> <b>in 2000 for FY 2000-2001</b>							
CCHE	Project	Project Type	Institution	Total Project Cost	Funding Sources	Sq. Ft. gsf or asf	Notes
Approved Jan. 20-00	Student Residence/Dining Hall Renovation	Cash	University of Colorado - Boulder	\$56,083,000	CFE	519,341 gsf (approx.)	--
Approved Dec. 1-99	Auditorium Remodel	Cash	University of Colorado HSC	\$2,195,296	CF	19,200 asf	--
Approved Jan. 24-00	Purchase of Bennett Property	Waiver	University of Colorado - Colo. Spgs.	\$357,000	CFE	3.76 acres; 3,000 sf home	--
Approved Jan. 11-00	Stadium Lighting	SB 202	University of Colorado - Boulder	\$850,000	CFE	--	--
--	School of Pharmacy Renovation	Waiver	University of Colorado - HSC	\$355,080	CFE	1,875 gsf	CCHE OK pending resolution of UCHSC issues
--	School of Dentistry Renovation	Waiver	University of Colorado - HSC	\$450,000	CFE	4,300	CCHE OK pending
			Subtotal CU System	\$60,290,376			
Approved Dec. 15-99	Municipal Lease #44- Matrix Assisted Laser Deorption Mass Spectrometer	Waiver	Colorado State University	\$212,000	CFE	--	Equipment lease purchase
Approved Dec. 15-99	Municipal Lease #45 - Circular Dichroism Spectrometer	Waiver	Colorado State University	\$90,712	CFE	--	Equipment lease purchase
Approved Dec. 15-99	Municipal Lease #46-Digital Instruments Bioscope AFM	Waiver	Colorado State University	\$120,000	CFE	--	Equipment lease purchase
Approved Dec. 15-99	Municipal Lease #47-Peripheral Radiology Equipment	Waiver	Colorado State University	\$203,144	CFE	--	Equipment lease purchase
Approved Feb. 10-00	Municipal Lease #48-Equine Sports Medicine Mobile Unit	Waiver	Colorado State University	\$291,143	CFE	--	Equipment lease purchase

Approved Dec. 15-99	Acquire 1/2 Acre Surrounded by Pingree Park	Waiver	Colorado State University	\$10,000	CFE	--	Equipment lease purchase
Approved Jan. 25-00	Transit Center on Campus	Waiver	Colorado State University	\$0	Fort Collins	--	
Approved Feb. 28-00	Sublease from BLM for Colorado State Forest Service at 2850 Youngfield, Lakewood	Lease	Colorado State University	\$11,980	FF	785 sf	annual; 1 yr w/option for 2nd, begin, 4/00
Approved Jan. 11-00	Equipment Storage at Platteville	Lease	Colorado State University	\$1,800	CF	600 sf	annual; 5 yrs. begin. Feb-00
Approved May 10-00	ARDEC - Linear-Move Irrigation System	Waiver	Colorado State University	\$104,286	CFE	--	--
Approved May 10-00	ERC Lab Remodel Room B208	Waiver	Colorado State University	\$106,000	CFE	1,526 asf	--
Approved May 10-00	CSFS Foothills Shop Renovation	Waiver	Colorado State University	\$199,800	CFE	3,000 asf	--
Approved May 10-00	CDC Lab Remodel Rooms 104, 222, 224	Waiver	Colorado State University	\$150,000	FF	625 asf	--
Approved May 10-00	Denver Center Renovation of Space	Waiver	Colorado State University	\$57,000	CFE	6,000 sq. ft.	--
Approved May 10-00	Granby Remodel CSFS District Office	Waiver	Colorado State University	\$85,000	CFE	3,822 gsf	--
Approved May 10-00	Plaza - Remove Road between Student Center and Library	Waiver	Colorado State University	\$249,500	CFE	--	--
Approved May 10-00	Mason Street Z Parking Lot	Waiver	Colorado State University	\$89,000	CFE	--	pave 50 spaces
Approved May 10-00	Additional Parking - Northeast Corner	Waiver	Colorado State University	\$91,300	CFE	--	build 52 new spaces
Approved May 10-00	Construct New Parking Lot at Moby	Waiver	Colorado State University	\$106,000	CFE	--	build 54 new spaces
Approved	Cooperative	Lease	Colorado	\$6,344	CFE	700 sq. ft.	July 1, 00 through June 30, 01

May 15-00	Extension - Grand Junction	Renewal	State University	annually	CFE	793 sq. ft.	July 1-00 through June 30-01
Approved May 15-00	Cooperative Extension - Alamosa	Lease Renewal	Colorado State University	\$9,600 annually	CFE	2,806sq. ft.	July 1-00 through June 30-01
Approved May 15-00	Colorado State Forest Service - Salida	Lease Renewal	Colorado State University	\$11,880 annually	CFE	1,788 sq. ft.	July 1-00 through June 30-01
Approved May 15-00	Colorado State Forest Service - La Junta	Lease Renewal	Colorado State University	\$8,050 annually	CFE	1,250 sq. ft.	July 1-00 through June 30-01
Approved May 15-00	Colorado State Forest Service - Colorado Springs	Lease Renewal	Colorado State University	\$5,419 annually	CFE	448 sq. ft.	July 1-00 through June 30-01
Approved May 15-00	Colorado State Forest Service - Grand Junction	Lease Renewal	Colorado State University	\$6,11 annually	CFE	950 sq. ft.	July 1-00 through June 30-01
Approved May 15-00	Center of Educational Access and Outreach, Equal Opportunity Center	Lease Renewal	Colorado State University	\$6,000 annually	CFE	600 sq. ft.	July 1-00 through June 30-01; rent to \$6,300 through Aug. 31-00
			Subtotal CSU System	\$2,232,076			
Approved Dec. 16-99	Acquisition of Store Property in Grand Junction	Waiver	Mesa State College	\$340,000	CF	5,616 gsf	\$240,000 purchase; \$100,000 reno.
			Subtotal State Colleges	\$340,000			
Approved March 1-00	Sale of Space in Tramway Building	Waiver	Auraria Higher Education Center	\$800,000	CF	34,892 sq. ft.	all revenues to State General Fund
			Subtotal Auraria	\$800,000			
Approved Feb. 02-00	Restoration of Bloedorn Building	Cash	Morgan Community College	\$540,797	CFE	--	--
Approved Jan. 3-00	Revised Parking Lot Request	SB 202	Northeastern Junior College	\$230,000	CF	--	--
	McBride Hall Remodel	Waiver	Otero Junior College	\$488,909	CCFE	9,663 sq. ft.	CCHE OK pending action by governing board
Approved April 12-00	Re-pave Phillips Whyman Lane	Waiver	Northeastern Junior College	\$43,500	M&O	--	--

Approved April 12-00	Kitchen/Cafeteria Upgrades	Waiver	Northeastern Junior College	\$225,000	Auxiliary	17,042 sq. ft.	Project request made partly in response to fire
Approved May 15-00	Comprehensive Learning Center Remodel	Waiver	Northeastern Junior College	\$30,000	CF	3,640 sq. ft.	--
			Subtotal CCCOES	\$1,558,206			

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item VI, C

**TOPIC: CONCEPT PAPER**

**PREPARED BY: WILLIAM G. KUEPPER**

## **I. SUMMARY**

This agenda item presents the concept paper submitted to the Commission during the past month, including:

(1) Bachelor of Arts in Interdisciplinary Studies at Adams State College

This report includes a summary of the issues identified by CCHE staff and a copy of the concept paper. No action required of the Commission at this time, but if the Commission wishes to have additional issues addressed or qu 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 sub 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, cap 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 reasons why the program is appropriate for the institution and its role and mission. CCHE policy does not requir 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 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 receiv 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 recommendatio based on the statutory criteria.

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

Colorado Commission on Higher Education (CCHE)  
June 1, 2000  
Agenda Item VI, C(1)

**TOPIC: CONCEPT PAPER: BACHELOR OF ARTS IN INTERDISCIPLINARY STUDIES AT ADAMS STATE COLLEGE (ASC)**

**PREPARED BY: DIANE LINDNER**

**I. BACKGROUND**

The staff of the Trustees of The State Colleges in Colorado has forwarded a concept paper for an interdisciplinary major at Adams State College that responds to the Commission's newly adopted Teacher Education policy reforming teacher education programs. The interdisciplinary program is intended to provide students who are planning a career in elementary education with the option of pursuing a broad-based interdisciplinary program of study. The interdisciplinary program is intended to provide an academic foundation for students seeking teacher licensure who will teach all subjects and must have a broad knowledge base grounded in the liberal arts and sciences. Courses in the major may not be used to meet general education requirements; this requires that students have a content emphasis that will include 12 hours of additional course work in a single subject area that supports the Colorado content standards for elementary teachers.

Adams State College's undergraduate degrees are specifically identified by statute as central to their role and mission. The college, founded in 1921 as a State Normal School, has been grounded in teacher preparation. Two-thirds of students at ASC are pursuing teacher licensure. Approximately two-thirds of teachers in local schools are ASC graduates.

**II. STAFF ANALYSIS**

- The proposed interdisciplinary degree is within the institution's pursuit of its role and mission.
- Students will receive education that includes a minimum of 800 hours of field experience as well as training in the sciences, mathematics, social studies and language arts content.
- The program is designed to fit the K-12 performance-based assessments by building heavily on content area. English and history will, for example, be acceptable areas of emphasis, but sociology and psychology will not.
- The proposed program includes 44 credit hours of general education, 45 credit hours of professional knowledge and student teaching and 31 credit hours of the interdisciplinary major.
- The number of credit hours adds to a total of 120 which fits within the statutory mandate of a four-year degree program.
- The proposed major will not require additional faculty resources.

**III. ITEMS TO BE ADDRESSED IN THE PROPOSAL**

After review of the concept paper, staff recommends that the institution and governing board develop the proposal to include much more detail in two areas especially:

- How the curriculum design specifically aligns with the K-12 content, performance-based standards for teacher licensing.
- How the institution proposes to assess and measure that the teacher education candidates have achieved the specified skills in each standards element, emphasizing demonstrations of the competencies of candidates as they work with children in field settings.
- How assessment of candidates is integrated into teacher preparation and the intensity of the experiences of the candidates with children in the field.
- How the overall teacher education program proposes to meet the criterion in SB154 related to institutions of higher education as adopted in CCHE policy in March 2000.
- Adoption of admission criterion

- ~~Adoption of admission criteria.~~

- Multiple entry points exist for students considering teacher education.
- A screening process identifies successful teacher education candidates.
- A counseling process advising teacher education candidates on the expectations of candidates.
- Curriculum design integrates field experience with content knowledge.
- The program identifies the knowledge, skills or dispositions to be developed in each course and field experience.
- Program design ensuring student teachers have a comprehensive, supervised field experience in a professional development school that provides strong role models, continuous feedback and support from both college faculty and supervising teachers.
- Design includes comprehensive assessment of candidate's knowledge of subject matter.
- Documented need for this program.

Staff recommends that the 2000-2001 program review be conducted under authorization of the recently adopted teacher education policy in April 2000. This review will be conducted jointly by the CCHE and the State Board of Education. The CCHE and SBE recommendations should be presented at the October meeting of the Commission as it considers new degree proposals.

#### **IV. INFORMING THE GOVERNING BOARD**

Following this meeting, the Commission shall inform the governing board about the above matters, and any additional issues that the Commission may raise about the proposed Bachelor of Arts degree in Interdisciplinary Programs.