

STATE OF COLORADO



DEPARTMENT OF HIGHER EDUCATION
Colorado Commission on Higher Education

Bill Ritter, Jr.
Governor

David E. Skaggs
Executive Director

Raymond T. Baker, Chair
Dean L. Quamme, Vice Chair
Richard L. Garcia
Richard L. Ramirez
Edward A. Robinson
Joel Rosenstein
Greg C. Stevinson
James M. Stewart
Judy Weaver

Colorado Department of Higher Education Agenda

March 1, 2007, 10:00 a.m.

[Colorado State University](http://www.csu.edu)

North Ballroom, Lory Student Center
Fort Collins, Colorado

Welcome by Dr. Larry Penley, President, Colorado State University System

- I. Opening Business
 - A. Attendance
 - [B.](#) Approval of Minutes for the February 2, 2007 Commission Meeting
 - C. Reports by the Chair, Commissioners, Commission Subcommittees, Advisory Committee Members and Executive Director
 - D. Public Comment
- II. Presentation
 - A. CollegenInvest Update (Demuth)
 - B. Legislative Update (Karakoulakis)
- III. Action Items
 - [A.](#) Technology Advancement Grants (Karakoulakis)
 - [B.](#) Governor's Opportunity Scholarship Phase Out (Bliss)
 - [C.](#) State Guaranteed General Education Courses, Review Cycle V, Round III (Leal)
 - [D.](#) The Board of Governors of the Colorado State University System's Proposal to Offer a Bachelor of Science Degree in Applied Computing Technology with concentrations in Computing Education and Information Technology (Carnahan)
- IV. Consent Items
 - [A.](#) A Consideration of Policy and Procedural Changes for the Discontinuance of Academic Degrees with Low Enrollment (Carnahan)
 - [B.](#) 2007-2008 Budget Update (Lindner)
- V. Informational Items
 - [A.](#) Report on Out-of-State/Out-of-Country Instruction (McKeever)

**MINUTES OF THE MEETING OF
COLORADO DEPARTMENT OF HIGHER EDUCATION
February 2, 2007**

Chairman Ray Baker called the meeting to order at 1:15 p.m.

Mr. Hank Brown, President of the University of Colorado System and Dr. Roy Wilson, Chancellor of the University of Colorado at Denver and Health Sciences Center welcomed the commissioners to the Auraria campus, home of the University of Colorado at Denver.

Chairman Baker welcomed David Skaggs to the position of Executive Director of the Colorado Department of Higher Education. Executive Director Skaggs expressed his delight in his appointment and looks forward to contributing to higher education in the State of Colorado.

Commissioners Ray Baker, Dean Quamme, Rick Ramirez, Ed Robinson, Joel Rosenstein, Greg Stevinson, James Stewart, and Judy Weaver were present. Commissioner Richard Garcia was excused.

Commissioner Quamme motioned to approve the November 2, 2006 minutes with a second by Commissioner Weaver. The minutes were passed unanimously.

There were no chair or advisory committee reports.

COMMISSIONER REPORT: Commissioner Stewart said that the high schools in the Colorado Springs area have not been contacted by College in Colorado staff. Only one in four high schools in the area had any materials regarding the College in Colorado effort.

PUBLIC COMMENT: George Walker commented on the lack of adequate public funding and the relation to diversity at the institutions.

PRESENTATION AND DISCUSSION

LEGISLATIVE UPDATE: John Karakoulakis gave an update on legislation that will affect or potentially affect the Colorado Department of Higher Education.

HIGHER EDUCATION SUMMIT PROPOSAL – DAVID LONGANECKER, EXECUTIVE DIRECTOR, WICHE: Dr. Longanecker gave an overview of WICHE and its purpose and made the offer to contribute to the Higher Education Summit. The Commissioners all agreed to allow WICHE to proceed.

ACTION ITEMS

2007-2008 STUDENT FINANCIAL AID BUDGET PARAMETERS: Tobin Bliss, Director of Financial Aid for the Colorado Department of Higher Education presented the agenda item to the Commissioners. He gave an overview of how the student budget parameters are used by the financial aid administrators in determining student eligibility for need-based financial aid. The parameters were set using published data from the Colorado Division of Housing, the United States Bureau of Labor Statistics and various business and industry sources. Depending on the student's living situation, housing, food, transportation, medical and personal expenses are set into different categories (see table in Agenda item). Books and supplies, child care and computer allowance is set at the same level for all students.

Commissioner Stevinson motioned to approve budget parameters and the motion was seconded by Commissioner Quamme. The motion passed unanimously.

MODIFICATIONS TO THE STATEWIDE TRANSFER POLICY: Vicki Leal gave a brief overview of the change in the communication content area of the current Statewide Transfer Policy. Specifically, the change includes an addition of an (optional) advanced writing course (in lieu of the intermediate writing course), thereby making the six-hour sequence of courses for students either beginning/intermediate writing or intermediate/advanced writing. The communication content requirement could be achieved by a student completing one of the two-course sequences listed above. The change would be effective fall semester 2007.

Commissioner Weaver motioned to approve and was seconded by Commissioner Quamme, the motion passed unanimously.

STATE GUARANTEED GENERAL EDUCATION COURSES, REVIEW CYCLE V, ROUND II: Vicki Leal provided the Commissioners with an overview of the most recent State Guaranteed General Education Course review. If approved, the results of the November 9, 2006 review will add 88 more courses to the gtPathways curriculum.

Commissioner Stevinson asked Ms. Leal how close this task is to completion. Ms. Leal said the Department of Higher Education is still waiting on a number of courses from the University of Colorado and Colorado State University. Alan Lamborn, Colorado State University, said his final courses should be submitted by April 2007. Michael Poliakoff, University of Colorado at Boulder, said that half of the submissions will be made by 2008 and completion by 2010.

Commissioner Stevinson motioned to approve the courses as submitted, Commissioner Weaver seconded the motion and the motion passed unanimously.

CONSENT ITEMS

VACANT BUILDINGS REPORT:

DEGREE AUTHORIZATION ACT:

Commissioner Weaver motioned to approve both consent items as one and Commissioner Quamme seconded her motion. The single motion was passed unanimously.

INFORMATIONAL ITEMS

CAPITAL ASSETS COMBINED QUARTERLY REPORT

LETTERS OF RESIGNATION:

CARRIE BESNETTE – COMMISSIONER

JOEL FARKAS - COMMISSIONER

There was no discussion and no action was taken.

The meeting adjourned at 2:20.

TOPIC: TECHNOLOGY ADVANCEMENT GRANTS

PREPARED BY: JOHN KARAKOULAKIS

I. SUMMARY

The Colorado Commission on Higher Education's Technology Advancement Grant (TAG) is intended to fund research, development or technology transfer to develop or implement waste diversion, or recycling strategies, including the use of waste tires. As well as other environmental research, development or technology transfer for materials or products of any kind. The funds are intended to help spur new innovation within these fields by utilizing Colorado's institutions of higher education and partnerships with the private sector. Funds are made available for the TAG program from the state's advance technology fund, which is financed by the waste tire recycling fee.

At the CCHE's October 2006 meeting, the Commission approved staff's policy, priorities, criteria, and request for proposals for the TAG program. Following approval, staff issued the request for proposals for the TAG program. Proposals were due by December 5, 2006. A total of twenty proposals were received totaling \$1,949,676.00 in funding requests. All of the proposals were reviewed separately three different times according to the same criteria. Staff from CCHE and the Colorado Department of Public Health and Environment reviewed each proposal once and the third review was based on field specific knowledge depending on the focus of the proposal from either, the Office of Economic Development, the Governor's Office of Policy and Initiatives, or various out of state university professors recommended by the National Science Foundation.

Each review evaluated proposals based on overall quality, technical innovation, viable results, ability to complete the project, benefits, and economic impact. Reviewers were asked to give an overall rating of each proposal based on the following scale: Excellent, Very Good, Good, Fair, or Poor.

II. STAFF ANALYSIS

The following are summaries of the twenty proposals that were received during the request for proposal process.

Proposal Number: 12050601

Title: "Viability of Engineered Fuel Briquettes From Biomass and Power Plant Waste Streams"

Principal Investigator: R. Malhotra

Organization: ICAST
Funding Request: \$58,000

Proposal Summary: Proposes to evaluate the viability of commercially manufacturing engineered fuel briquettes composed of 40% fly ash and 60% biomass waste. Project is expected to produce economic, environmental and community benefits. Briquettes have already been produced in the laboratory based on prior research conducted over three years from a partnership between iCAST and CSU-P, CU Boulder and CSU Fort Collins.

Proposal Number: 12050602
Title: “University/Industry Cooperative Membrane Research”
Principal Investigator: A. Greenberg
Organization: CU-Boulder
Funding Request: \$197,074

Proposal Summary: The Membrane Applied Science and Technology (MAST) Center and CU Boulder proposes five separate projects on membrane research: polymerization techniques to fabricate high capacity membranes; membrane processes for fractionation and recovery of lignins; micro sensors for detection of biofouling; separation of divalent and trivalent copper and iron species in liquid solutions; and organic carbon components.

Proposal Number: 12050603
Title: “Creating Engineered Structural Building Components from Oriented Strand Board that has been Diverted from Landfill Waste Stream”
Principal Investigator: W. Schmelzer
Organization: Green Giant LLC
Funding Request: \$86,600

Proposal Summary: Proposes to confirm that scrap oriented strand board (OSB) can be laminated into thicker boards and beams that are suitable for replacing new lumber in residential building. Commercial success in reusing OSB would divert tens of thousands of tons of waste from the waste stream as well as reduce the need for new lumber.

Proposal Number: 12050604
Title: “Green Water Reuse Investigation to Create New Colorado Jobs, Develop New Technologies, and Conserve Colorado Water”
Principal Investigator: J. Flobeck
Organization: Aqua Prima
Funding Request: \$98,000

Proposal Summary: Proposes to investigate individual county health requirements for green and gray water usage, and then analyze these requirements and develop standards that all counties will agree on. Then take the company’s existing green water device and

adapt it to the standards agreed on by counties and formulate a business plan to manufacture and market the devices across the West.

Proposal Number: 12050605

Title: “The Colorado Roadmap to Construction and Demolition Recycling and Reuse”

Principal Investigator: T. Plant

Organization: ReSource Conservation

Funding Request: \$65,175

Proposal Summary: Proposes to comprehensively analyze the construction and demolition waste stream and determine the most effective ways to manage and maximize diversion of that waste stream from the landfill for communities throughout the state. Project will examine model legislation and innovative procedures gathered from around the country and the world as well as potential market opportunities for waste products.

Proposal Number: 12050606

Title: “Development and Marketing of In-Situ Soil Mixing for Cleanup of Contaminated Soils and Reuse of Contaminated Lands”

Principal Investigator: T. Sale

Organization: CSU

Funding Request: \$148,440

Proposal Summary: The objective of this project is to broaden the scope and realize the full commercial potential of two environmental technology patents donated by DuPont to CSU, covering in situ admixing of waste zero valent iron and stabilizing agents for treatment of chlorinated solvents in subsurface settings. The net benefit of this technology is a dramatic reduction in future releases of contaminants to down-gradient groundwater.

Proposal Number: 12050607

Title: Web-Based Image Processing System for Environmental Resource management

Principal Investigator: L. Johnson

Organization: CU-Denver

Funding Request: \$148,945

Proposal Summary: Proposes to use web based image processing for utilization in enterprise spatial decision support systems. Project will harness cutting edge satellite and data processing technology to provide distributed image processing to various organizations for environmental monitoring and removal of waste.

Proposal Number: 12050608

Title: “Construction Site Recycling; Model for Efficient Landfill Diversion and Industry Growth”

Principal Investigator: L. Skumatz

Organization: Econservation
Funding Request: \$24,790

Proposal Summary: Proposes to demonstrate successful recycling programs for the construction industry and communicate this information to private sector construction companies. The project will examine models of successful recycling programs, establish a pilot program and conclude with a manual of best practices for construction site managers and an analysis of future opportunities.

Proposal Number: 12050609
Title: “Development of High Durability Rubber-Modified Concrete”
Principal Investigator: Y. Xi
Organization: CU-Boulder
Funding Request: \$50,000

Proposal Summary: Proposes to use crumb rubber in concrete to enhance the ductility and toughness of concrete and also reduce disposal of waste tires. The project will research rubber modified concrete to find the optimal mix and proper coupling agents to improve the long term durability which could be used later on various projects such as roadways and bridges.

Proposal Number: 12050610
Title: “Three Waste-to Value Technologies for Sustainable Urban Infrastructure in Colorado”
Principal Investigator: A. Ramaswami
Organization: CU- Denver
Funding Request: \$155,000

Proposal Summary: Proposes three waste-to value technologies for urban sustainability in Colorado cities; high performance green concrete; zero waste and negative biodiesel processes; and converting organic municipal waste to energy. If the technologies were adopted they would make Colorado a leader in waste diversion and sustainability.

Proposal Number: 12050611
Title: “Promoting Rubberized Asphalt and Other Scrap Tire Products in Colorado”
Principal Investigator: R. Amme
Organization: DU
Funding Request: \$110,958

Proposal Summary: Proposes laboratory and field efforts relating to rubberized asphalt. The project will provide technical support for additional Terminal Blend rubberized asphalt as it is used in paving projects by monitoring roadway noise reduction and skid

resistance. The project will also attempt to promote new asphalt rubber chip seal maintenance projects among C-DOT entities.

Proposal Number: 12050612

Title: "Development of an Inventory & User Matching Database to Support Colorado Recycling"

Principal Investigator: M. Griek

Organization: Colorado Assoc. of Recyclers

Funding Request: \$70,328

Proposal Summary: Proposes to develop and implement a system to collect, manage, and share baseline data on sources of recycled materials and potential users of these materials within the Colorado business community. The project will obtain tonnage of diverted waste materials that were processed and brokered in 2006 in the state and the tonnage that was exported creating the most complete record of the sources and uses of the state's recyclable commodities.

Proposal Number: 12050613

Title: "Gap Analysis, Best Practices "Technologies" and Technology Transfer for Residential and Commercial Waste Diversion in the State of Colorado"

Principal Investigator: L. Skumatz

Organization: Econservation

Funding Request: \$46,830

Proposal Summary: Proposes to gather technical information on programs, tonnage, and demographics to identify current waste diversion levels, assess gaps in service, and analyze best practice programs and policy technologies within and outside the state. The project will also provide a practical toolkit for environmental or recycling coordinators to facilitate technology transfer on best practices.

Proposal Number: 12050614

Title: "Development of a Near Real-Time Technique for the Measurement of Carbonyl Compounds in the Atmosphere"

Principal Investigator: L. Anderson

Organization: CU-Denver

Funding Request: \$65,161

Proposal Summary: Proposes to design and construct a laboratory prototype for an automated, continuous system for sampling and analyzing carbonyl compounds in the ambient air. The goal is to develop and test a near real-time system that is capable of sub ppb detection of a broad series of carbonyl compounds. It is intended that this system will be an economically viable option as a replacement for cartridge sampling and laboratory analysis systems that are currently used.

Proposal Number: 12050615

Title: “Low Maintenance, Self-Cleaning Membranes for Water Reuse”

Principal Investigator: R. Wickramasinghe

Organization: CSU

Funding Request: \$92,241

Proposal Summary: Proposes a one year proof of principle research and development project which will result in the development of new low maintenance, self-cleaning nano-filtration and reverse osmosis membranes for water treatment. The project would focus on wastewater and water co-produced during oil and gas exploration.

Proposal Number: 12050616

Title: “A Biological Assessment Tool for Metal Toxicity – Ensuring Colorado’s Environmental Health”

Principal Investigator: T. Roane

Organization: CU-Denver

Funding Request: \$65,999

Proposal Summary: Proposes developing a bacterial indicator for environmental cadmium toxicity. Specifically, the study will take a soil-borne bacterium and investigate it for use in sensing cadmium toxicity. The long-term goal of the research is to create a marketable biosensor for environmental quality indication.

Proposal Number: 12050617

Title: “Durable Roof Tiles from a Fly-Ash/Tire Composite: Testing and Manufacturing Toward a Sustainable World”

Principal Investigator: P. Heyliger

Organization: CSU

Funding Request: \$113,126

Proposal Summary: Proposed project focuses on refining the development of “green composite roof tiles” consisting of structural composite combinations of fly ash, the by-product of coal combustion in power plants, and ground up used tires. The project will: refine composite mixtures to find the most durable tile; produce enough for a real life test against benchmark standards for concrete roof tiles; conduct cost analysis for various production scales; and create a marketing and overall commercial strategy.

Proposal Number: 12050618

Title: “Expansive Foundation Soils Stabilized with Waste Tire Rubber”

Principal Investigator: J. Carraro

Organization: CSU
Funding Request: \$128,913

Proposal Summary: Proposes to carry out original basic research to evaluate and demonstrate the feasibility of using waste tire rubber to reduce the swell potential of local expansive foundation soils from Colorado.

Proposal Number: 12050619

Title: “Building an Environmentally Sound and Sustainable Infrastructure for Electronics Recycling in Colorado”

Principal Investigator: M. Griek

Organization: Colorado Assoc. of Recyclers

Funding Request: \$75,513

Proposal Summary: Proposes to research Colorado’s e-scrap industry in order to determine what business and technology investments will best help it grow. Research and activities will look at access, current environmental health and safety practices, estimate the number of potential jobs, determine best practices, and expand re-use opportunities to bridge technology gaps.

Proposal Number: 12050620

Title: “Optimizing the Effluent from the Vertical Tube Reactor for Agricultural Application”

Principal Investigator: J. McGrew

Organization: Applied Science

Funding Request: \$148,601

Proposal Summary: Proposes to evaluate the environmental effect of direct field application of the reacted effluent from a Vertical Tube Reactor which employs air to oxidize the impurities in aqueous hog waste. The project will utilize a unique laboratory reactor to subject hog waste to different temperatures, pressures, and reaction times to produce different end products which will then be evaluated on plant growth in soil types found in Colorado.

IV. STAFF RECOMMENDATION

All reviews were not received by the deadline for publication of this briefing book so full recommendations for funding could not be included. Final recommendations for funding will be distributed at the Commission meeting. ([See attachment](#))

STATUTORY AUTHORITY

Authorization for the expenditure of these funds is found in 23-1-106.5 (9) (b) C.R.S., as follows:

23-1-106.5. Duties and powers of the commission with regard to advanced technology - fund created. (9) (b) The commission shall expend moneys in the advanced technology fund to finance research, development, and technology transfer with regard to waste diversion and recycling strategies or environmental alternatives by providing research funding and technology transfer capital to individuals or public or private entities seeking to develop or implement waste diversion or recycling projects for materials or products of any kind, including, without limitation, strategies pertaining to waste tires, Including the use of waste tires for noise mitigation along state highways as prioritized by the Department of Transportation pursuant to section 43-2-402 (5) (b), C.R.S., or for environmental, research, development, and technology transfer programs in the state for materials and products of any kind. The commission shall adopt a policy for the expenditure of such moneys, which shall contain priorities and the criteria for providing research funding and technology transfer.

TOPIC: TECHNOLOGY ADVANCEMENT GRANTS

PREPARED BY: JOHN KARAKOULAKIS

I. PROPOSALS RECOMMENDED FOR FUNDING

The following four proposals are recommended for full funding. All twenty proposals were rated by three separate reviewers. Each proposal had two reviews conducted by CCHE and the Colorado Department of Public Health and Environment and a third review was conducted by either the Office of Economic Development, the Governor's Office of Policy and Initiatives or various out of state university professors recommended by the National Science Foundation. In selecting which proposals to recommend for funding, CCHE staff assigned a point value to each overall review rating in the following order:

Poor	Fair	Good	Very Good	Excellent
1	2	3	4	5

The four proposals recommended for funding earned the highest reviews. Proposals that received a score of 13 and above have been recommended for funding. Staff believes these high standards will ensure that TAG funding is used to its greatest advantage and highest impact, with worthwhile projects which have a high potential of success being funded.

Proposal Number: 12050601

Title: "Viability of Engineered Fuel Briquettes From Biomass and Power Plant Waste Streams"

Principal Investigator: R. Malhotra

Organization: ICAST

Funding Request: \$58,000

Proposal Score: 15

Proposal Summary: Proposes to evaluate the viability of commercially manufacturing engineered fuel briquettes composed of 40% fly ash and 60% biomass waste. Project is expected to produce economic, environmental and community benefits. Briquettes have already been produced in the laboratory based on prior research conducted over three years from a partnership between iCAST and CSU-P, CU Boulder and CSU Fort Collins.

Proposal Number: 12050610

Title: “Three Waste-to Value Technologies for Sustainable Urban Infrastructure in Colorado”

Principal Investigator: A. Ramaswami

Organization: CU- Denver

Funding Request: \$155,000

Proposal Score: 13

Proposal Summary: Proposes three waste-to value technologies for urban sustainability in Colorado cities; high performance green concrete; zero waste and negative biodiesel processes; and converting organic municipal waste to energy. If the technologies were adopted they would make Colorado a leader in waste diversion and sustainability.

Proposal Number: 12050617

Title: “Durable Roof Tiles from a Fly-Ash/Tire Composite: Testing and Manufacturing Toward a Sustainable World”

Principal Investigator: P. Heyliger

Organization: CSU

Funding Request: \$113,126

Proposal Score: 15

Proposal Summary: Proposed project focuses on refining the development of “green composite roof tiles” consisting of structural composite combinations of fly ash, the by-product of coal combustion in power plants, and ground up used tires. The project will: refine composite mixtures to find the most durable tile; produce enough for a real life test against benchmark standards for concrete roof tiles; conduct cost analysis for various production scales; and create a marketing and overall commercial strategy.

Proposal Number: 12050618

Title: “Expansive Foundation Soils Stabilized with Waste Tire Rubber”

Principal Investigator: J. Carraro

Organization: CSU

Funding Request: \$128,913

Proposal Score: 14

Proposal Summary: Proposes to carry out original basic research to evaluate and demonstrate the feasibility of using waste tire rubber to reduce the swell potential of local expansive foundation soils from Colorado.

TOPIC: GOVERNOR'S OPPORTUNITY SCHOLARSHIP PHASE OUT

PREPARED BY: TOBIN BLISS/DIANE LINDNER

I. SUMMARY

At January 2006 Commission meeting, Commission staff presented the option of eliminating the Governor's Opportunity Scholarship program. Building off those discussions and conversations with the Commission, the new administration and each of the institutions, this action item presents the phase out of the Governor's Opportunity Scholarship financial aid program over the next several fiscal years.

II. BACKGROUND

The Governor's Opportunity Scholarship Program is a unique state need-based financial aid program that provides financial assistance and academic support to a very limited number of low-income students. When the program was created in Fiscal Year 1999, the intent was to change enrollment and graduation patterns of low-income students by focusing state and federal financial assistance toward Colorado residents who are the least likely to attend college for financial reasons. Eligible recipients receive both academic and financial assistance throughout their undergraduate career. Participating institutions must provide appropriate academic support systems including, tutoring, academic counseling and peer mentoring to ensure student retention. Originally, the Commission chose the recipients but that became an administrative burden and the awarding was placed at the institution level.

III. STAFF ANALYSIS

In the current Colorado higher education budget environment of very limited resources, we should administer the limited money available for student financial aid as equitably as possible. Equity for this purpose should mean that students with comparable needs and comparable academic credentials are as much as possible treated comparably in granting need-based financial aid. The Governor's Opportunity Scholarship, however, diverts some need-based aid to make more generous awards to selected students who thereby receive preferential treatment compared to their peers. Currently, there are approximately 1,240 students participating in the program with an average award of \$6,446. By comparison, the average award for all other students who qualify for GOS but were not selected is \$1,536.

Phasing out GOS will shift approximately \$2M each year for the next 4 years – or \$8M cumulatively – into the pool of need-based aid available to all needy students on an equal basis. In other words, looking forward, by putting what might have been GOS recipients into the category of all students eligible for need-based aid, we will be able to fund a greater number of need-based grants at the current average, or the same number at a higher average. We will avoid

the current inequity where one of two needy students with identical circumstances would receive a GOS while the other would receive substantially less aid. The change is prospective only, to be phased in over four years, so current GOS recipients will be grandfathered in and not affected by the change.

This issue is one of equity not of the success or failure of the program. Statistics show that students participating in the GOS program have a slightly higher GPA (2.84 compared to 2.66) and retention rate (52% compared to 41%) than students who qualify for GOS but did not receive GOS. However, one would reasonably expect these students would have a higher retention rate or GPA. Funding is guaranteed each year a student is in the GOS program—meaning their education is paid for regardless of where the student attends. These students do not have to worry about paying for school while other students, whose financial aid packages vary from year to year, may have to take a job to make sure their expenses are covered. These factors contribute to higher GPA's and retention rates.

IV. STAFF RECOMMENDATION

That the Commission approves the proposed phase out of the Governor's Opportunity Scholarship.

**TOPIC: STATE GUARANTEED GENERAL EDUCATION
COURSES, REVIEW CYCLE V, ROUND III**

PREPARED BY: VICKI A. LEAL

I. SUMMARY

In compliance with C.R.S. 23-1-125, the Student Bill of Rights, contained in this agenda item are recommendations for courses nominated by institutions, reviewed by faculty, and recommended for the general education guaranteed statewide transfer program, gtPathways, during Cycle V, Round III (February 9, 2007). Guaranteed transfer means that a course is universally transferable among all Colorado public institutions of higher education and applicable to general education requirements within the Associate of Arts, Associate of Science, Bachelor of Arts, and Bachelor of Science degree programs.

The recommendations contained in this agenda item represent the outcome of faculty consideration of 55 course nominations for the gtPathways program. The Commission has previously approved 802 general education courses in over 20 disciplines (e.g., English, math, history, biology, etc.) during the first four cycles of gtPathways course nominations, which began in January 2003.

The following table summarizes courses nominated and reviewed for statewide transfer during Cycle V, Round III, by content area and recommendation status.

COURSE CONTENT AREA	NUMBER OF COURSES RECOMMENDED	NUMBER OF COURSES NOT RECOMMENDED	NUMBER OF COURSES DEFERRED
Arts & Humanities	4	6	NA
Communications	1	1	NA
Mathematics	4	0	NA
Natural & Physical Science	2	15	NA
Social/Behavioral Sciences	16	6	NA
TOTAL	27/55	28/55	NA

II. BACKGROUND

Following the passage of the Colorado Opportunity Fund (COF) legislation in 2004, the Commission began performance contract negotiations with the governing boards of all public institutions in the state. Included in performance contracts is a requirement that all institutions have lower division general education course requirements of between 30 and

40 credit hours and submit all the courses included in their required general education curricula for review and possible inclusion in the statewide transfer program. Colorado's public colleges and universities have established timelines for the submission of their general education courses to the Colorado Commission on Higher Education. Beginning with the calendar year 2005 and continuing through June 2009, all of Colorado's public post-secondary institutions are submitting their general education core courses to self-selected members of the state's public two and four year faculty for peer review and inclusion in the gtPathways curriculum for guaranteed transfer.

The February 9, 2007 review was the third round of gtPathways Cycle V. Round IV of review Cycle V is scheduled for April 13, 2007. The spring 2007 reviews will complete the fifth cycle (V) of gtPathways course reviews. As necessary to accommodate future volume, CCHE will schedule and facilitate additional review cycles throughout the 2007 calendar and academic year in order to review courses nominated for the gtPathways guaranteed transfer program.

The list of recommendations on nominated courses found herein is the result of deliberations among 38 faculty members representing various public two- and four-year institutions in the state who met in Denver at the offices of the Colorado Commission on Higher Education/Department of Higher Education on February 9, 2007.

III. STAFF ANALYSIS

Initial policy (fall 2003), provided for the guarantee of up to 35-37 credit hours of successfully completed courses taken from the list of approved state guaranteed general education courses, which are published on the gtPathways page of the CCHE website. However, in June 2005, the Commissioners approved changes to the statewide transfer policy that effectively reduced the guaranteed credit hours from 35-37 down to 31. Effective fall semester 2006 (August, 2006), gtPathways guarantees 31 credit hours of successfully completed courses taken from the approved state guaranteed general education list of courses. Additionally, the GE 25 Council, in agreement with Academic Council, revised the procedures and forms utilized in the gtPathways course review process. The courses recommended herein conform to the newly revised process, procedures, program rules and forms of the gtPathways program as well as the revised content and competency criteria.

Faculty review committees from all five content areas participated in the February 9, 2007 review. Faculty from Arts and Humanities, Mathematics, Communication, Natural and Physical Sciences and Social and Behavioral Sciences reviewed the courses presented in Attachment A and took one of two actions:

- Recommend a course for inclusion in the statewide program; or
- Labeled a course as not recommended

CCHE staff has communicated all of the faculty recommendations to institutions, including justifications for those courses receiving the “not recommended” designation by faculty review committees.

Institutions will have the opportunity in future cycles to make any necessary corrections and/or revisions and re-nominate a course for consideration and placement into the gtPathways curriculum.

Adoption of the attached list of courses below will continue the implementation of Colorado’s guaranteed general education transfer program. Nomination and review of additional courses for consideration will continue with one spring 2007 review, to be held on April 13, 2007 (location: TBA).

Pursuant to performance contract requirements, institutions must clearly distinguish guaranteed transfer courses from those not approved for guaranteed transfer in course catalogs and related materials; courses nominated for guaranteed transfer, but not approved, must be easily distinguishable from courses carrying the guaranteed status. In addition, prominently placed, in the general education section of the college catalog, shall be explanations of the distinction between courses approved for guaranteed transfer and courses not approved for guaranteed transfer to other Colorado colleges and universities.

IV. STAFF RECOMMENDATION

That the Commission approve the courses recommended by faculty reviewers for guaranteed statewide transfer status, effective August 2007 (fall semester 2007).

V. SUPPLEMENTAL INFORMATION

Copies of all materials included in course submissions as well as copies of faculty reviewers’ worksheets are on file in the Academic and Student Affairs Office of the Colorado Commission on Higher Education.

STATUTORY AUTHORITY

23-1-125. Commission directive - student bill of rights – degree requirements - implementation of core courses - on-line catalogue - competency test. (1) Student bill of rights. The general assembly hereby finds that students enrolled in public institutions of higher education shall have the following rights:

(c) Students have a right to clear and concise information concerning which courses must be completed successfully to complete their degrees;

(d) Students have a right to know which courses are transferable among the state public two-year and four-year institutions of higher education;

(e) Students, upon completion of core general education courses, regardless of the delivery method, should have those courses satisfy the core course requirements of all Colorado public institutions of higher education;

(f) Students have a right to know if courses from one or more public higher education institutions satisfy the students' degree requirements;

(g) A student's credit for the completion of the core requirements and core courses shall not expire for ten years from the date of initial enrollment and shall be transferable.

(3) **Core courses.** The commission, in consultation with each Colorado public institution of higher education, is directed to outline a plan to implement a core course concept, which defines the general education course guidelines for all public institutions of higher education. The core of courses shall be designed to ensure that students demonstrate competency in reading, critical thinking, written communication, mathematics, and technology. The core of courses shall consist of at least thirty credit hours, but shall not exceed forty credit hours. Individual institutions of higher education shall conform their own core course requirements with the guidelines developed by the commission and shall identify the specific courses that meet the general education course guidelines. If a statewide matrix of core courses is adopted by the commission, the courses identified by the individual institutions as meeting the general education course guidelines shall be included in the matrix. The commission shall adopt such policies to ensure that institutions develop the most effective way to implement the transferability of core course credits.

Attachment A

**gtPathways
Review Cycle V, Round III
February 9, 2007**

Inst	Category	Course Prefix	Course #	Course Title	Action
MSCD	Arts and Humanities (GT-AH2)	ENG	1110	Introduction to Fiction	Recommended
CCCS	Arts and Humanities (GT-AH2)	LIT	225	Introduction to Shakespeare	Recommended
UNC	Arts and Humanities (GT-AH3)	PHIL	150	Ethics in Theory and Practice	Recommended
UNC	Arts and Humanities (GT-AH4)	SPAN	202	Intermediate Spanish II	Recommended
<i>CSU-FC</i>	<i>Arts and Humanities (GT-AH1)</i>	<i>DCC</i>	<i>110</i>	<i>Understanding Dance</i>	<i>Not Recommended</i>
<i>MSCD</i>	<i>Arts and Humanities (GT-AH1)</i>	<i>ART</i>	<i>1040</i>	<i>Art Appreciation Survey</i>	<i>Not Recommended</i>
<i>CCCS</i>	<i>Arts and Humanities (GT-AH2)</i>	<i>LIT</i>	<i>257</i>	<i>Literature and Film</i>	<i>Not Recommended</i>
<i>MSCD</i>	<i>Arts and Humanities (GT-AH2)</i>	<i>ENG</i>	<i>2460</i>	<i>Introduction to Children's Literature for Non-Majors</i>	<i>Not Recommended</i>
<i>UNC</i>	<i>Arts and Humanities (GT-AH4)</i>	<i>GER</i>	<i>202</i>	<i>Intermediate German II</i>	<i>Not Recommended</i>
<i>CCCS</i>	<i>Arts and Humanities (GT-AH4)</i>	<i>ASL</i>	<i>211</i>	<i>American Sign Language IV</i>	<i>Not Recommended</i>
UNC	Communication (GT-CO2)	MUS	152	Writing in the Performing and Visual Arts	Recommended
UNC	Communication (GT-CO2)	ENG	225	Writing on a Theme	Not Recommended
CCCS	Mathematics (GT-MA1)	MAT	204	Calculus III with Engineering Applications	Recommended
CCCS	Mathematics (GT-MA1)	MAT	215	Discrete Mathematics	Recommended
CCCS	Mathematics (GT-MA1)	MAT	261	Differential Equations with Engineering Applications	Recommended
CSU-FC	Mathematics (GT-MA1)	MATH	255	Calculus for Biologist 2	Recommended
UCDHSC	Natural & Physical Sciences (GT-SC1)	ENVS	1042	Introduction to Environmental Science	Recommended
CSU-FC	Natural & Physical Sciences (GT-SC1)	LIFE	102	Attributes of Living System	Recommended
CSU-FC	Natural & Physical Sciences (GT-SC1)	AA	101	Astronomy Lab	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC1)	HORT	100	Horticultural Science	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC1)	PHCC	141	Physics for Scientists & Engineers	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC1)	GCC	121	Introduction to Geology Lab	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	AA	100	Introduction to Astronomy	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	BICC	102	Insects, Science and Society	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	FWCC	104	Wildlife, Ecology and Conservation	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	GCC	122	Geology of the Environment	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	GCC	120	Exploring Earth: Physical Geology	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	GCC	124	Geology of Natural Resources	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	NR	120A	Environmental Conservation	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	NRCC	130	Global Environmental Systems	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	NRCC	150	Oceanography	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	PACC	101	Introduction to Human Disease	Not Recommended
CSU-FC	Natural & Physical Sciences (GT-SC2)	SOCCR/LAND	220	Fundamentals of Ecology	Not Recommended
CSU-FC	Social & Behavioral Sciences (GT-HI1)	ETCC/HYCC	255	Native American History	Recommended
CSU-FC	Social & Behavioral Sciences (GT-SS1)	ECON	101	Economics of Social Issues	Recommended
CSU-FC	Social & Behavioral Sciences (GT-SS1)	POCC	131	Current World Problems	Recommended

CSU-FC	Social & Behavioral Sciences (GT-SS1)	SWCC	110	Contemporary Social Welfare Policy	Recommended
CSU-FC	Social & Behavioral Sciences (GT-SS1)	POCC	232	International Relations	Recommended
UNC	Social & Behavioral Sciences (GT-SS1)	GER	116	Contemporary German	Recommended
CSU-FC	Social & Behavioral Sciences (GT-SS1)	POCC	103	State and Local Government & Politics	Recommended
CCCS	Social & Behavioral Sciences (GT-SS3)	ANT	107	Introduction to Archaeology	Recommended
CSU-FC	Social & Behavioral Sciences (GT-SS3)	SOCR/HORT	171	Environmental Issues in Agriculture	Recommended
CSU-FC	Social & Behavioral Sciences (GT-SS3)	SCC	100	General Sociology	Recommended
CSU-FC	Social & Behavioral Sciences (GT-SS3)	HDFS	101	Individual and Family Development	Recommended
CSU-FC	Social & Behavioral Sciences (GT-SS3)	ETCC	205	Ethnicity and the Media	Recommended
CSU-FC	Social & Behavioral Sciences (GT-SS3)	EDCC	275	Schooling in the United States	Recommended
UCDHSC	Social & Behavioral Sciences (GT-SS3)	ANTH	1302	Introduction to Archaeology	Recommended
UNC	Social & Behavioral Sciences (GT-SS3)	HISP	102	Hispanic Cultures in the United States	Recommended
CCCS	Social & Behavioral Sciences (GT-SS3)	PSY	249	Abnormal Psychology	Recommended
<i>UNC</i>	<i>Social & Behavioral Sciences (GT-H11)</i>	<i>HIST</i>	<i>112</i>	<i>Asian Civilization</i>	<i>Not Recommended</i>
<i>UNC</i>	<i>Social & Behavioral Sciences (GT-H11)</i>	<i>HIST</i>	<i>290</i>	<i>American Immigration</i>	<i>Not Recommended</i>
<i>CSU-P</i>	<i>Social & Behavioral Sciences (GT-SS3)</i>	<i>AGRI</i>	<i>116</i>	<i>Plants and Civilizations</i>	<i>Not Recommended</i>
<i>MSCD</i>	<i>Social & Behavioral Sciences (GT-SS3)</i>	<i>SWK</i>	<i>1010</i>	<i>Introduction to Social Welfare and Social Work</i>	<i>Not Recommended</i>
<i>UCDHSC</i>	<i>Social & Behavioral Sciences (GT-SS3)</i>	<i>SOC</i>	<i>2462</i>	<i>Introduction to Social Psychology</i>	<i>Not Recommended</i>
<i>UNC</i>	<i>Social & Behavioral Sciences (GT-SS3)</i>	<i>HUSR</i>	<i>205</i>	<i>Introduction to Human Services</i>	<i>Not Recommended</i>

**TOPIC: PROPOSAL TO OFFER A BACHELOR OF SCIENCE IN
APPLIED COMPUTING TECHNOLOGY WITH
CONCENTRATIONS IN COMPUTING EDUCATION AND
INFORMATION TECHNOLOGY.**

PREPARED BY: JULIE CARNAHAN

I. SUMMARY

The Board of Governors of the Colorado State University System has submitted a proposal for a Bachelor of Science degree in Applied Computing Technology with concentrations in computing education, and information technology. Both concentrations provide students with a strong background in computer programming and information technology, while preparing them to apply these skills in non-traditional information technology careers.

The secondary education concentration combines information technology skills with pedagogical training to produce licensed and highly qualified technology instructors. In addition, they will be prepared to teach AP computer science classes conforming to the College Board curriculum and content standards.

The Computing Technology concentration will create computer technologists with capabilities in programming, multi-media and the Internet, who will be able to develop new software for businesses and fields that do not currently fully exploit information technology. In addition, these students will have the organizational training needed to bring new technology to fruition within an organization. The new program expects enrollments of about 100 students after five years between the two concentrations.

The Applied Computing Technology (ACT) program serves three critical needs:

- 1) Improved retention of information technology students. Currently, almost 40% of computer science students leave the major.
- 2) Supplying Colorado High Schools with high qualified computer science and educational technology instructors. The State of Colorado and the College Board have recognized the need for improved information technology instruction at the High School level.
- 3) Providing Colorado organizations and businesses with professionals who combine information technology skills with organizational acumen.

The content of the degree plan includes general education coursework, course work for the concentration of either computer technology or information technology, and

professional education licensure courses. Whether a student is completing the computer technology or information technology concentration, the Bachelor of Science degree in Applied Computing Technology degree can be completed in 120 credit hours.

The degree proposal has been reviewed by CDE as an endorsement preparation program in Instructional Technology and has been recommended for approval ([Attachment A](#)). Department of Higher Education staff recommend approval of the proposed Bachelor of Arts degree in Applied Computing Technology with concentrations in computer technology and information technology.

II. BACKGROUND

The following is summarized from the Colorado State University proposal for the Bachelor of Science Degree in Applied Computer Technology.

CSU ROLE AND MISSION:

The proposed Applied Computing Technology degree supports the University's mission to offer a comprehensive array of undergraduate programs in the tradition of a land grant university. This program recognizes the rapidly changing technological and educational needs of the State's economy by making available a technologically-oriented education and training program accessible to deserving applicants from all classes and groups in response to the needs of the people of Colorado, the nation and the world constituencies. There is an existing and growing base of technology sophisticated businesses whose primary focus is not computer science, but who increasingly require IT skills. Examples include biotechnology and geographical information systems. Such industries will be well served by this program. In addition, the teacher training program will meet unmet demand in the Colorado public schools for teachers of technology.

EVIDENCE OF NEED FOR THE PROGRAM:

The ACT program will provide a new major for students who seek careers in information technology but are not primarily interested in the traditional fields of computer science, computer engineering, and the more business-oriented computer information systems. It will also include a Teacher Training program for students desiring a career in K-12 education, leading to licensure in Instructional Technology.

Computer science requires students to be capable of extremely fine-grained problem solving, a high degree of patience, and unrelenting perseverance. Not all students who pursue the computer science major exhibit these characteristics, despite being very interested in and capable of using computers. The retention rate for computer science majors has traditionally been relatively low at about 60%. For students who find themselves unhappy with the computer science major the information technology major

alternatives are currently limited to computer information systems and computer engineering, or perhaps technical journalism, all controlled majors.

In the past, students changing their majors out of CS move to other majors in the following proportions: approximately one third change their majors to Open Option Seeking Business, one third change to majors in the liberal arts, and the remaining third spread themselves over a broad range of engineering, applied human sciences, and natural resource majors.

The new major will be attractive to those students and will aid overall student retention at CSU.

The teacher training program will provide public school expertise in computing technology that has not existed up to this point. Graduates of this program would be capable of teaching a broad range of computing technology: computer applications, web development, and programming, including AP computer science courses. Teaching AP computer science requires expertise existing in very few schools in the state, partly due to a lack of teacher licensure with a computer technology focus. The closest currently existing licensure area is the mathematics endorsement, but this requires very minimal computing technology skills (far below that needed to teach AP computer science). According to the American Association for Employment in Education, there is currently a shortage of technology education teachers from the Rocky Mountain region through the Eastern half of the country and computer science teachers particularly in the West. This program will help address this shortage.

While the computer science degree emphasizes professional competency in specialized sub-areas of computing, the applied computing technology program will emphasize the use of programming skills in a variety of computer application areas. The proposed program diverges from the existing computer science program at about the end of the sophomore year. The purpose of the existing computer science major is to expand basic programming skills learned in the first two years into more specific areas of software development and systems (e.g., operating systems, networks, compilers, databases) allowing graduates to pursue careers with organizations that develop large-scale software. In contrast, ACT students in the Computing Technology concentration will turn their attention to a study of organizational principles through a general business principles core, and advanced computer technology courses covering advanced programming, computer applications, and computer uses, with the goal of becoming computer professionals working in fields that use computer technology in solving subject-specific problems (e.g., business organizations, the biotechnology industry, GIS, atmospheric research, education, etc.). This makes the program very different from the existing computer science, computer information systems, and computer engineering degrees. Students who pursue the teacher training program will be licensed by the State of Colorado to teach computing technology in public schools, offer expert guidance to schools in the use of instructional technology, and to teach AP Computer Science courses.

EVIDENCE OF STUDENT DEMAND

This new program will provide new choices for undecided majors who may be interested in both traditional subjects and computing technology. Currently students interested in a career in computer technology can only choose from among three potential majors: computer science and computer engineering (both requiring interest and talent in mathematics and technical minutiae), and computer information systems (requiring a strong interest in business).

A recent poll of existing computer science majors indicated that if this new degree were available today, 5% of current CS majors (about 20 students) would consider moving to it. A survey of Open Option Students in the Center for Advising and Student Achievement resulted in approximately 75 students expressing an interest in the proposed programs. About 15 of these students expressed a *strong* interest, asserting that such a program would be perfect for them considering their goals, interests and talents. This shows evidence that not all students are happy with the options currently available to them. Each year approximately a half dozen students approach the CS Department to discuss public school teaching opportunities in computing technology, only to be disappointed to discover there has been no computing technology teacher endorsement area. Such students will find the teacher education concentration meeting their needs.

Following are expected enrollments based upon the survey data:

Enrollment Projections:		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Full Implementation
	In-state Headcount	25	35	50	75	100	125
	Out-of-State Headcount	5	8	10	10	10	10
	Program Headcount	30	43	60	85	110	135
	Program Graduates	0	5	10	20	25	35

The selection indices of the students in the program are expected to track the average range for the College of Natural Sciences. We also expect that greater numbers of minorities and women will be attracted to this program than the traditional computer science program, due to its broader application in the work place.

III. STAFF ANALYSIS

Commission staff have reviewed this proposed program to ensure that it meets the State's performance measures outlined in C.R.S. 23-1-121. This program meets all performance measures.

COURSE CONTENT AND SKILLS REQUIRED FOR LICENSURE

Based on the complete syllabi received, and additional information, CDE has determined that all standards for the Colorado State University's Instructional Technology Teacher preparation program are being met.

IV. STAFF RECOMMENDATION

That the Commission approve the request of the Board of Governors of the Colorado State University System to offer a Bachelor of Science Degree in Applied Computer Technology with concentrations in Computing Education and Information Technology.

STATUTORY AUTHORITY

C.R.S. 23-1-121

Meeting Date: October 5, 2006

Item No.: _____

AGENDA SUMMARY SHEET

Title

Approve the proposed endorsement preparation program in Instructional Technology, submitted by Colorado State University, Ft Collins.

Type of Item

Action X Information

Request Discussion/Presentation/Commendation _____

Request Scheduled Time (hearing or out-of-CDE guest) _____

Staff member responsible at Board meeting Dorothy Gotlieb

Abstract: Summary Statement and Background of Issue

Colorado State University, Ft Collins has submitted for SBE information, its endorsement preparation program in Instructional Technology. Course materials were submitted by CSU and reviewed by applicable CDE staff.

Overall comments:

The courses appear to be developed as based on and are reflective of the required content for meeting licensure requirements for this endorsement area.

The college has been working to align its program with the SBE teacher performance-based preparation standards.

Recommendation for Board Action

Approve the content of the proposed endorsement preparation program for Instructional Technology, as submitted by Colorado State University, Ft Collins.

Submitted by: Dorothy Gotlieb

Date: September 9, 2006

Originated by: Dorothy Gotlieb

Fiscal Impact: _____

Karen Stroup, Chief of Staff

Approved for Agenda: _____

William J. Moloney, Commissioner

**This document represents the information required for the
Colorado Department of Education’s evaluation
of the proposed Instructional Technology Teacher endorsement preparation
program at
Colorado State University – Ft Collins**

EVALUATION

Colorado State University is seeking approval from the Colorado Department of Education (CDE)/Colorado State Board of Education (SBE) for its Instructional Technology Teacher licensure endorsement preparation program.

The CDE recommendation is to be based on evaluating whether:

- *There is alignment of the Colorado State University program with the SBE-adopted preparation standards;*
- *The program must include satisfactory demonstration of the skills required for licensure, as specified by the SBE, and whether...*
- *There are adequate and comprehensive assessments and appropriate demonstrations of candidate knowledge of subject matter, throughout the program.*

BACKGROUND

CDE is responsible for evaluating each endorsement preparation program to determine whether or not its content meets or exceeds the teacher preparation standards set by the SBE. A positive evaluation, by CDE, is forwarded to the SBE. The intent of the content approval process is to assure that teacher licensure candidates, in their endorsement areas, are clearly able to:

- I. Effectively demonstrate the skills required for licensing endorsement, including*
- II. Passing the SBE-approved comprehensive test of content knowledge, in the endorsement area*

To be approved, a program must, therefore, ensure, in adequate and appropriate ways, that the candidate is knowledgeable about and has demonstrated the skills required for licensure endorsement, and thus, for teaching students effectively.

CDE’s Content Matrix

<i>List SBE-adopted Standard and Standard Elements and the courses in which they are incorporated.</i>	<i>Related Required Candidate Coursework Tasks (i.e., Readings, coursework, activities, etc.) How does the IHE prove to its satisfaction that its candidates know the content?</i>	<i>Demonstration(s) of Proficiency (Documented evidence provided by the candidate to demonstrate content-area proficiency) How does the IHE know that the candidate can apply the content effectively?</i>
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Disposition:

Based on the complete syllabi received, and further requested documentation, CDE has determined that all standards for the Colorado State University’s Instructional Technology Teacher preparation program ARE being met.

STAFF ANALYSIS

The CDE staff has reviewed the focus of proposed licensure endorsement preparation program(s) as based on the alignment of the curricula to applicable SBE-adopted Standards for content-area preparation. Staff requires documented evidence that graduates will have mastered the skills identified in appropriate SBE-adopted licensure endorsement standards.

Colorado State University provided a program matrix, in which each endorsement standard was matched with a course in which it was covered. The review team evaluated the program for alignment with Instructional Technology Teacher (ITT) licensure standards. The courses in the program do appear to fulfill the requirements of the ITT standards. CDE appreciated the clear and thorough manner in which the proposal was presented and the work that Colorado State University put into the document.

General Observations

The Colorado State University ITT Program, as described through its syllabi, is thorough and challenging, preparing students well for the many aspects of technology that the Instructional Technology Teacher will encounter. The program asks students to study the basics of technology, to apply them within their classrooms, and to develop new programs and processes for the classroom as well as their students. It is determined that these candidates will be well-prepared to work with students, as well as fellow teachers/peers, to move the school forward with their technology goals.

Matrix

The Colorado State University matrix was put together very well. The information provided was complete and easy to understand. The proposal was extremely efficient in its design and structure which facilitated the review.

***Note:** To receive an institutional recommendation (IR) for endorsement from the College/University, candidates must be rated as “proficient” or “advanced” on all required SBE-adopted Standards and Standard Elements.*

CDE RECOMMENDATION

CDE has determined that the Colorado State University’s ITT preparation program meets all requirements of the SBE-adopted standards for an endorsement preparation program in this content area, and will provide a solid program to its student niche.

CDE staff has determined that the Colorado State University’s ITT preparation program will ensure that its candidates for endorsement have a comprehensive knowledge of the content mandated for their endorsement area, know how to deliver that content, and know how to deliver it effectively to students.

CDE appreciates the clear and thorough manner in which the Instructional Technology Teacher preparation program proposal was presented and the work that Colorado State University put into the document - and is putting into its program - and, hereby, forwards its recommendation to the SBE for its approval.

**TOPIC: A CONSIDERATION OF POLICY AND PROCEDURAL
 CHANGES FOR THE DISCONTINUANCE OF ACADEMIC
 DEGREES WITH LOW ENROLLMENT**

PREPARED BY: JULIE CARNAHAN

I. SUMMARY

The Commission on Higher Education has the authority and responsibility to monitor demand for academic degree programs at Colorado public colleges and universities, pursuant to C.R.S. 23-1-107, as implemented in Commission Academic Affairs Policy Section I, Part G: Policy and Procedures for the Discontinuance of Academic Degrees with Low Program Demand.

Commission policy requires that, each year, CCHE staff review degree production in all academic programs offered at public colleges and universities throughout the state. According to CCHE policy, it is intended that, in November of each year, CCHE staff will analyze institutional degree production and then notify governing boards of programs that fail to meet graduation requirements for three consecutive years.

Following identification of low demand programs, Commission staff notify the governing boards of low demand programs. The Commission expects the governing boards to discontinue degree programs that fail to meet the graduation criteria. However, each institution may exempt no more than five (5) low demand baccalaureate degree programs that are central to the institution's role and mission or where access is not available elsewhere in the state from closure.

The majority of programs that institutions choose to exempt from low demand status are in STEM (science, technology, engineering, and math) program areas. These programs are in areas that are integral not only to the institutional role and missions but to the workforce needs of the State of Colorado and the nation.

Department of Higher Education staff recommend a review of existing statute and Commission policy and procedures for the discontinuance of academic degrees with low program demand to determine whether changes should be made reflect current higher education and workforce goals in the state and the nation.

II. BACKGROUND

According to CCHE policy, the Commission will notify the governing boards of low demand academic degree programs, that is, those that fail to meet minimum enrollment

and graduation standards as specified in policy. The 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.

The identification of low demand academic degree programs is done by compiling a three-year history of degrees conferred and identifying degree programs that fall below the following parameters (CCHE Academic Affairs policy, Section I, Part G, 4.02.01):

1. Baccalaureate degrees must graduate ten (10) students in the most recently reported year or a total of 20 students in the last three years.
2. 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.
3. Doctoral degree programs must graduate at least one (1) student in the most recently reported year or a total of three (3) students in the last three years.

The tables in [Addendum A](#) illustrate the total number of degrees awarded, by institution, program level, and program name for the past five years.

III. STAFF ANALYSIS

Original intent of C.R.S. 23-1-107 and Commission policy was based in part on increasing efficiency and avoiding program duplication. While these remain important goals for higher education institutions and the Department of Higher Education, the policies and procedures put in place to carry out these goals, are at odds with other compelling goals of the higher education institutions, the Department of Higher Education and the state. Current workforce demands and the need for **more** students graduating with degrees in many of the programs on our low program demand list **not less** suggests a review of the statute, policy and procedures is in order.

IV. RECOMMENDATION

That the Commission direct Department of Higher Education staff to undertake a review a current statutes, Commission policies and procedures on low demand programs and program discontinuance.

Table 1: Low Demand Programs, by Institution

Inst	CIP	Degree	Program Name	Status	Degrees Awarded In-						Action By
					2000-01	2001-02	2002-03	2003-04	2004-2005	2005-2006	
ASC	40.0501	B.A./B.S.	Chemistry	E	5	9	1	7	3	7	--
	27.0101	B.A./B.S.	Mathematics	E	2	3	4	2	7	2	--
CSM	45.0601	M.S.	Economics	L.D. 1						0	2009
CSU	01.0000	B.S.	Bio-agricultural Science	L.D. 1						0	2009
	01.0103	B.S.	Agricultural & Resource Economics	E	0	4	2	3	5	4	--
	14.1301	B.S.	Engineering Science	E	7	3	4	5	7	6	--
	51.2306	B.S.	Occupational Therapy	L.D. 1						1	2009
	26.0403	Ph.D.	Anatomy	L.D. 1						0	2009
CSU-P	31.0301	B.A.	Recreation	L.D. 1						0	2009
	40.0801	B.S.	Physics	E	3	0	1	2	2	0	--
FLC	45.0601	B.A.	Economics	E	3	5	2	5	5	7	--
	40.0801	B.S.	Physics	E	1	2	1	2	5	2	--
	50.0501	B.A.	Theatre	E	5	2	5	5	2	4	--
	27.0101	B.A.	Mathematics	L.D.3	4	12	0	5	7	3	2007
MSC	45.0101	B.A.	Social Sciences	L.D. 1						5	2009
MSCD	05.0201	B.A.	African American Studies	E*	2	1	2	3	2	2	--
	40.0401	B.S.	Meteorology	E*	4	7	5	5	7	4	--
	40.0801	B.S.	Physics	E*	3	3	0	3	5	6	--
	50.0501	B.A.	Theatre	L.D. 1				2	9	8	2009
UCB	16.0902	B.A.	Italian	E	7	4	13	5	5	2	2009
	16.1200	Ph.D.	Classics	L.D.2	2	0	0	1	0	0	2008
	40.0508	Ph.D.	Chemical Physics	L.D. 2	0	1	0	1	0	0	2008
	42.1801	Ph.D.	Educational Psychological Studies	L.D. 4	2	0	0	0	0	0	2006
UCCS	40.0801	B.S.	Physics	L.D. 1				3	10	3	2009
UCDHSC	40.0801	B.S.	Physics	E	5	2	8	2	1	5	--
UNC	05.0203	B.A.	Mexican American Studies	E	3	1	1	2	2	2	--
WSC	40.0501	B.A.	Chemistry	E	3	3	1	4	2	5	--
	27.0101	B.A.	Mathematics	E	4	2	5	2	7	9	--
	45.0201	B.A.	Anthropology	L.D. 1	1	11	7	4	2	8	2009
	50.0901	B.A.	Music	E	4	1	5	6	4	5	--

TOPIC: FISCAL YEAR 2007-2008 DEPARTMENT OF HIGHER EDUCATION BUDGET UPDATE

PREPARED BY: DIANE LINDNER

I. SUMMARY

The Commission approved a budget in October, 2006 that was submitted to the Joint Budget Committee that recommended the first year request of the NCHEMS study at the level of \$113.8M. That request included general fund payments for mandated costs, the second year of unfunded enrollment, payment of private school stipends and an increase equivalent to the CPI for Local District Schools and the Area Vocational Schools. The budget summary is shown in the chart below.

JBC Request

Type of Cost	Cost
Stipends st \$2,670	\$10,043,960
Fee-For-Service	\$60,039,836
Unfunded Enrollment	\$36,472,069
**Financial Aid	\$5,729,207
Local District Jr Colleges	\$478,382
Area Vocational Schools	\$337,257
Private Schools	\$1,090,995
Total Request	\$114,191,706

*Tuition Revenue is increased by 3.5% at CCCS, 5% at 4 year, and 7% at Research

**Financial Aid Request: \$5.3M Need Based Grants, \$429,207 Native American

After the submission of the Commission budget, the new administration took office and began reviewing the needs of the state as a whole. The Office of State Planning and Budget then asked the Department to review its budget in light of their ability to fund that level of an increase for higher education.

II. ANALYSIS

A. General Fund Operating Budget

Governor Owen's budget recommendation to the Joint Budget Committee was a \$50M request summarized below.

*Governor Owens' Request

Type of Cost	Cost
Stipends at \$2,670	\$10,043,960
Fee-For-Service	\$38,865,045
Private Schools	\$1,090,995
***Financial Aid	\$5,729,207
Total Request	\$55,729,207

* At \$50M request 70% of Mandated Cost Increases are being funded. The remaining 30% will be funded through tuition.

**Tuition Revenue is increased by 3.5% at CCCS, 5% at 4 year, and 7% at Research

***Financial Aid Request: \$5.3M Need Based Grants, \$429,207 Native American

The Owens' version maintained the use of the mandated cost model and requested funding for mandated costs at 69% across-the-board.

Discussions with Governor Ritter and the Joint Budget Committee directed the Department of Higher Education to come to agreement with the Governing Boards on the distribution of approximately \$50M in General Fund dollars.

During several discussions over a two to three week period in February, the CEO's of the state institutions of higher education came to agreement with regard to recommended distribution of the new General Fund support anticipated for fiscal year 2007-08. The essence of the governing boards' agreement and the Department's request to the JBC is that each institution will receive the same proportionate share of the requested \$48.9 million in new general fund support for fiscal year 2007-08 as it received in total general fund support for the current 2006-07 fiscal year. The agreement also depends on the enactment of Senate Bill 97, which would provide additional funding for the CU-Health Sciences Center and indirectly afford some relief to the financial pressure on the entire higher education system.

The request is \$57,698,388, \$1.9 million more than the request for higher education submitted by OSPB on February 9. This is the amount needed to provide a flat increase of 8.45% for Area Vocational Schools and Local District Colleges, the same as the average for the rest of higher education. This corrects an omission from the budget submitted by the Owens Administration.

Type of Cost	Total Amount	% of Gov Boards Total
Governing Board Requests		
Adams State College	\$1,061,668	2.17%
Mesa State College	\$1,743,704	3.57%
Metropolitan State College	\$3,478,995	7.11%
Western State College	\$884,911	1.81%
Colorado State University System	\$10,425,736	21.32%
Fort Lewis College	\$908,142	1.86%
University of Colorado System	\$15,194,462	31.07%
Colorado School of Mines	\$1,693,914	3.46%
University of Northern Colorado	\$3,207,159	6.56%
Colorado Community College System	\$10,310,311	21.08%
*Financial Aid	\$5,729,207	
Local District Junior Colleges	\$1,154,950	
Area Vocational Schools	\$814,234	
Private Schools	\$1,090,995	
Total Request	\$57,698,388	

*\$5.3M for Need based aid, \$429,207 for Native American Tuition Assistance

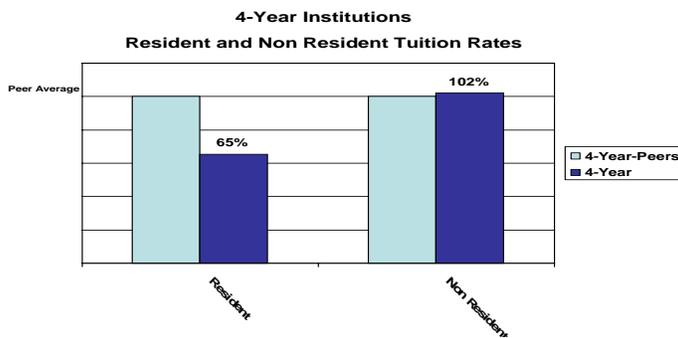
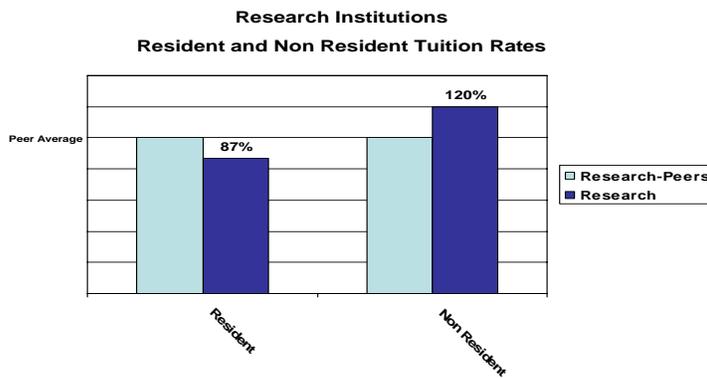
*Contingent upon Passage of SB97

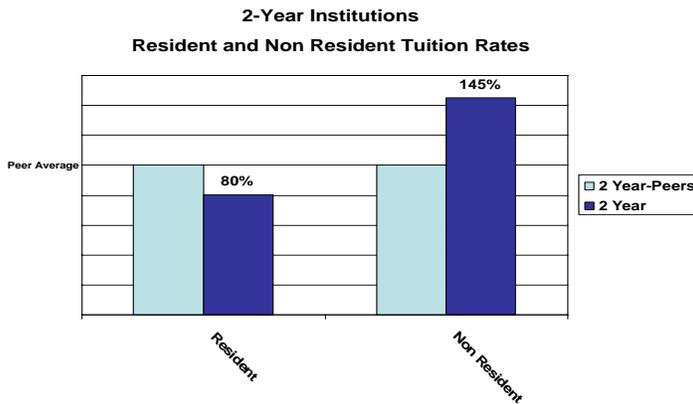
B. Tuition Revenues

The tuition proposal recommended in the prior version of the budget was based upon revenue increases of 3.5% for Community Colleges, 5% for governing boards of four-year institutions and 7% for governing boards of research institutions.

Footnote 43 in the 2006-2007 Long Bill limited governing board tuition increases for resident, undergraduate students to a rate increase of 2.5%. Since the inflation calculated at the time for institutions was paid at 84% by the General Fund, institutions were not able to make any quality improvements. Much of the tuition and General Fund revenues funded inflation and other mandatory cost increases in this fiscal year. In prior fiscal years, there were reductions in General Fund and, as a result, no quality improvements were made.

A recent study commissioned by CCHE and conducted by NCHEMS, showed that most institutions, when compared to their peers across the country, are **lower in undergraduate resident tuition rates** and higher in non-resident tuition rates. The following charts compare the resident and non-resident tuition and fees for Research, Four Year and Community Colleges in Colorado with their peers nationwide.





As you can see from the charts, resident tuition rates at Research, Four Year, or Community Colleges when compared to peer institutions are well below the peer average. For example, research institutions resident tuition rates on average are 87% of the peer average. Correspondingly, non resident tuition rates are well above the peer average. Essentially, this demonstrates that there may be flexibility in setting resident tuition rates and little or no flexibility in setting non-resident tuition rates as they may have already outpaced what the market can handle.

In addition, the Department feels that the Tabor time-out relegates tuition spending authority for all other student populations to the discretion of the elected or appointed governing boards.

Tuition flexibility in FY2007-2008 will allow governing boards to address the lack of revenue available for inflationary and other increased costs such as utilities and other operating costs for new buildings coming on line. Lack of revenue also prevents quality improvements they want to make to enhance the quality of education they can provide students.

To loosely paraphrase one of the University presidents, *Colorado is a low tuition state but a high tuition state for any low income student or family.* Balancing the needs of low income families and students with the goal of moving Colorado's institutions into an average revenue position with their peers requires that the price of higher education be offset by increased financial aid for low income families.

III. STAFF RECOMMENDATION

That the Commission concur with the agreed upon approach for the budget for the Department of Higher Education as set forth above. That the Commission also concur with the policy the Department is working to develop to provide governing boards greater tuition flexibility in exchange for a higher commitment to financial aid to mitigate tuition increases for Colorado's lowest income students.

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

PREPARED BY: MATT McKEEVER

I. SUMMARY

The Commission holds statutory responsibility to approve instruction offered out-of-state beyond the seven states contiguous to Colorado. By action of the Commission in 1986 the Executive Director may act for the Commission to approve or deny requests from governing boards for approval of courses and programs to be offered by their institutions. This agenda item includes instruction that the Executive Director has certified as meeting the criteria for out-of-state delivery. The Trustees at Metro State College Denver and the Trustees of Adams State College sponsor these programs.

II. ACTION

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

The Board of Trustees of Mesa State College submitted a request to offer the following out-of-country instructional programs to be delivered by Mesa State Extended Studies:

- **“FLAV 290 – Spanish Language Immersion”**; June 28-July 29, 2007 in Costa Rica at the University of Costa Rica.
- **“MARK 496/BUGB 520 – International Electronic Marketing”**; May 21-June 15, 2007 in Germany at Rostock University.
- **“BIOL 433/533 – Marine Invertebrate Communities”**; July 30-August 6, 2007 in Charleston, Oregon at the Oregon Institute of Marine Biology.

The Trustees of Adams State College submitted a request to offer the following out-of-state/out-of-country instructional program to be delivered by Adams State College Extended Studies:

- **“HPPE 589: Modern Concepts in Coaching Football 2007”**; February 23-25, 2007 in Las Vegas, Nevada.

STATUTORY AUTHORITY

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