REGULAR MEETING OF THE STATE BOARD OF REGENTS
SALT LAKE COMMUNITY COLLEGE, STUDENT CENTER, REDWOOD CAMPUS
JANUARY 21, 2011

Agenda

7:30 a.m. – 9:00 a.m. BREAKFAST MEETING – STATE BOARD OF REGENTS, SLCC BOARD OF TRUSTEES, PRESIDENT BIOTEAU, COMMISSIONER SEDERBURG
Rooms 221/223

9:15 a.m. – 10:15 a.m. MEETINGS OF BOARD COMMITTEES

PLANNING/PROGRAMS COMMITTEE
Regent John H. Zenger, Chair
Room 219 (Corner Room)

ACTION:
New Programs

1. Dixie State College – Bachelor of Arts/Bachelor of Science Degree in Mathematics — Tab A
2. Dixie State College – Bachelor of Arts/Bachelor of Science Degree in Mathematics Education — Tab B
3. New Emphases — Tab C
   A. University of Utah – Energy Engineering Emphasis in the Chemical Engineering Degree
   B. Utah Valley University – Writing Studies Emphasis in the BA/BS English Degree
4. Proposed Revisions to Policy R473, *Standards for Granting Credit for Course Work Completed in Non-credit Instructional Formats* — Tab D

INFORMATION:

5. College Access Challenge Grant Subgrant Recipients — Tab E

FINANCE/FACILITIES COMMITTEE
Regent Nolan E. Karras, Chair
Rooms 207/213

ACTION:

1. Salt Lake Community College – Campus Master Plan — Tab F
2. Salt Lake Community College – Herriman Land Bank Property Request — Tab G
3. Utah State University – Non-State Funded Property Project (Athletic Center) — Tab H
4. UHEAA – Proposed Revision to Policy R601, *Board of Directors of the Utah Higher Education Assistance Authority* — Tab I

INFORMATION:

5. USHE – Report of Auxiliary Funds — Tab J
6. USHE – Annual Report of Institutional and System Bonded Indebtedness — Tab K

7. USHE – Annual Grants and Contracts Report Tab L
8. USHE – Report of Audit Review Subcommittee Tab M
9. University of Utah – Revenue Bond Closing Tab N
10. Weber State University --- Revenue Bond Closing Tab O

10:15 a.m. – 10:30 a.m. BREAK

10:30 a.m. – 11:45 a.m. COMMITTEE OF THE WHOLE AND REGULAR MEETING OF THE BOARD
Oak Room

1. Administration of Oath of Office to Regent Jim Wall
2. Commissioner's Report
3. Legislative Update Tab P
4. Dixie State College – Planning University Access, Growth, and Facility Build-out Tab Q
5. General Consent Calendar Tab R
6. Report of Board Committees
7. State of the College Report – President Cynthia A. Bioteau
8. Report of the Chair
9. Other

NEXT BOARD MEETING: March 24-25 – Dixie State College

12:00 noon – 1:00 p.m. -- LUNCH AND JOINT MEETING WITH STATE BOARD OF EDUCATION
Oak Room

1. Welcome – SBR Chair David J. Jordan
2. Remarks – SBE Chair Debra Roberts
3. Prosperity 2020 (12:30 p.m.)

1:00 p.m. – 1:30 p.m. Special Guest: The Honorable Gary Herbert, Governor

4. Statewide Perspectives and The Governor's Commission on Education Excellence – Governor Herbert
   Questions and Discussion --- Board Members
   Moderator – Commissioner Sederburg

1:30 p.m. – 2:30 p.m.

5. Commissioner's Update and Introduction to Vision 2020 – Commissioner Sederburg

6. Superintendent's Update – Superintendent Shumway

2:30 p.m. – 2:40 p.m. REFRESHMENT BREAK

2:40 p.m. – 4:30 p.m. (Joint Meeting Continued)

7. Initiatives and Progress
   A. Joint College and Career Readiness Statement — Tab S
      Associate Commissioner Liz Hitch and Mary Shumway, USOE Director Of Career and Technical Education

   B. Utah Data Alliance: Power of Shared Data for Benchmarking Student Progress/Implementation Issues and Strategies – Associate Commissioner Cameron Martin; Joe Curtin, Director of USHE Institutional Research; Dr. John Brandt, USOE Information Technology Director; Brent Christensen, Utah Data Alliance Grant Manager — Tab T

8. K-16 Alliance
   Proposed Structural Adjustment, Membership, and Committee Changes — Tab U
   Dr. Hitch and Dr. Park
   Presidents' Updates – Building Regional K-16 Alliances

9. Common Core Standards Implementation — Tab V
   Sydnee Dickson, USOE Director of Teaching and Learning

10. Curriculum Alignment K-16
    K-12 Teacher Preparation and Professional Development
    General Education/Concurrent Enrollment/Early College High School Math

11. Wrap-up and Identification of Topics/Issues and Date for Next Joint Meeting
    Chairs Jordan & Roberts

4:30 p.m. - 5:00 p.m. EXECUTIVE SESSION MEETING – STATE BOARD OF REGENTS (Room 219, Corner Room)

Projected times for the various meetings are estimates only. The Board Chair retains the right to take action at any time. In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during this meeting should notify ADA Coordinator, 60 South 400 West, Salt Lake City, UT 84180 (801-321-7124), at least three working days prior to the meeting. TDD # 801-321-7130.

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January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Dixie State College of Utah – Bachelor of Science and Bachelor of Arts Degrees in Mathematics – Action Item

Issue

Dixie State College requests approval to offer Bachelor of Science and Bachelor of Arts Degrees in Mathematics, effective Spring 2011. The program was approved by the institution's Board of Trustees on November 5, 2010. This degree proposal is accompanied by a proposal to offer BS and BA Degrees in Mathematics Education.

Background

The DSC Mathematics Degree is designed to meet the needs of those students who wish to acquire certain mathematical skills in pursuit of challenging career paths, as well as the needs of students who love mathematics and wish to seek graduate level study in mathematics and related fields. The mathematics baccalaureate is an appropriate degree for students preparing for careers in actuarial science, computer programming and statistical analysis, operations research, data encryption systems design, engineering, secondary or higher education, and many other professions.

The proposed program will require students to complete a set of rigorous core courses which will provide graduates with a foundation in the fundamental areas of calculus, linear algebra, Euclidean/Non-Euclidean geometry, analysis, number theory, probability, and statistics. The curriculum offers majors the opportunity of in-depth study in sequential coursework, as well as a senior capstone project. Each degree requires the completion of at least 120 semester credits, including a minimum 32 credits of general education.

The Department of Mathematics at DSC has been offering upper-division courses each semester for the past four years, and enrollment has increased dramatically since the first offerings. The existing faculty includes experienced educators with doctoral degrees who are qualified to teach upper-division courses, as well as master's-prepared teachers experienced in offering the required lower-division mathematics courses.

The mathematics faculty at DSC is composed of qualified, experienced, and diverse professors. The new degrees will not require additional staff. The Mathematics Department has a lecturer/advisor to provide academic advisement and counseling; likewise, secretarial and clerical support under the current departmental structure is adequate. As the program grows, additional personnel may be added.

Policy Issues

USHE institutions were supportive. No policy issues were raised.

Commissioner's Recommendation

The Commissioner recommends the Regents review the Dixie State College of Utah proposal for a Bachelor of Arts and Bachelor of Science Degrees in Mathematics, raise questions, and, if satisfied, approve the request.

William A. Sederburg, Commissioner

WAS/PCS

Academic, Career and Technical Education, and Student Success Committee

Action Item

Request to Offer Bachelor of Science and Bachelor of Arts Degrees in Mathematics

Dixie State College of Utah

Prepared for:
William A. Sederburg
by
Phyllis C. Safman

January 12, 2011

SECTION I: The Request

Dixie State College requests approval to offer Bachelor of Science and Bachelor of Arts degrees in Mathematics effective Spring 2011. The program was approved by the institution's Board of Trustees on November 5, 2010. This degree proposal is accompanied by a proposal to offer BS and BA degrees in Mathematics Education.

SECTION II: Program Description

Complete Program Description

An outline of the program curriculum and the program schedule can be found in Appendices A and B, respectively.

Purpose of the Degree

The approval of the mathematics baccalaureate will further enhance Dixie State College's ability to meet the educational goals of its students and to fulfill the obligation mandated in DSC's mission to offer baccalaureate programs in core or foundation areas consistent with four-year colleges. Some graduates of the mathematics program will enter the workforce directly as well-qualified contributors to industry, business, and government; other students will be prepared to enter graduate schools in mathematics or math-related disciplines such as engineering, medicine, physics, economics, finance, computer science, and many new fields that require mathematical skills and training. Still others will seek secondary education licensure and become highly qualified mathematics teachers.

Institutional Readiness

Dixie State College now has a decade of experience as a baccalaureate institution and it boasts an institutional environment appropriate for its role. Thoughtful and sustained attention to seeking and retaining credentialed teaching faculty, developing student services and library and technological resources, and funding facilities expansion have poised the institution to successfully add the proposed mathematics degree.

The Department of Mathematics at DSC has been offering upper-division courses each semester for the past four years, and enrollment has increased dramatically since the first offerings. The existing faculty includes experienced educators with doctoral degrees who are qualified to teach upper-division courses, as well as master's-prepared teachers experienced in offering the required lower-division mathematics courses.

The degree proposal will rely on existing departmental structure and will require no additions or reorganization. Likewise, the existing process of regular program assessment and the existing culture of continuous improvement will serve the new baccalaureate program well.

Faculty

The mathematics faculty at DSC is composed of qualified, experienced, and diverse professors. In addition, the current physical sciences faculty at Dixie State College is sufficient to offer supporting courses for the science component of the mathematics degree. Existing mathematics faculty include four members with Ph.D. degrees. Full-time faculty include five masters-prepared faculty members whose combined teaching experience at Dixie State totals nearly eighty years. At this time, the mathematics department is preparing to advertise for one additional full-time faculty member with a terminal degree, and it will hire a

second new Ph.D. faculty member to replace a master's-prepared faculty member who will be retiring within the next two years. As the program matures, additional faculty may be needed to accommodate growth. A complete faculty list with credentials and experience can be found in Appendix C.

Staff

The new degree will not require additional staff. The Mathematics Department has a lecturer/advisor to provide academic advisement and counseling; likewise, secretarial and clerical support under the current departmental structure is adequate. As the program grows, additional personnel may be added.

Library and Information Resources

Dixie State College is well aware that building library resources is an integral part of program development, and the Browning Library continues to expand appropriate collections for current baccalaureate offerings. The library currently has sufficient titles in mathematics itself, with additional titles in mathematics education and an abundance of titles in secondary education. Many of the resources in the library are electronic offerings. Journals in mathematics and math education are on the library shelves, and videos and CDs are also available. The Browning Library is committed to supporting baccalaureate programs by ordering any material requested.

Admission Requirements

Any matriculated DSC student in good standing with the college is eligible for admission to the major. Declaration of the major is required for admission and is accomplished through the processes defined by the Registrar's Office. Students are admitted to the degree program directly upon declaring the major. To graduate under this program, in addition to the required course work, all mathematics majors are required to receive a "C" or better and an overall GPA of at least 2.0 in major course work.

Student Advisement

The Mathematics Department recognizes that advisement is crucial to student success. The program faculty is in the process of developing an advisement protocol that will guide students from the time they declare the mathematics major to graduation. Each student will be assigned a faculty mentor, with the math lecturer/advisor taking the primary advisement role.

Justification for Graduation Standards and Number of Credits

Graduates must earn a total of 120 credits, which include a minimum of 45 mathematics credits, 13 required credits in Physics and Computer Science, 37 elective credits, and 25 general education course credits (plus 9 additional credits which fill both G.E. and Core requirements). The total credit amount is within the 126 credit hour limit for a BS degree, as mandated by Regents.

External Review and Accreditation

Dr. Virginia M. Buchanan, Professor and Chair, Department of Mathematics at Hiram College, Hiram, Ohio, was retained as a consultant for the DSC mathematics program. She writes, "the proposed mathematics program overall appears to be a good one. Students who complete the program will have experienced the breadth of mathematics and will have studied the foundational areas of mathematics. The graduates of the program will be prepared for further study and for a variety of careers." Dr. Buchanan went on to make several valuable recommendations regarding strengthening the curriculum in the areas of oral and written skills, technology, depth. The report is available upon request.

Projected Enrollment

Nationwide and local data (described in detail under "Need" and "Market Demand" below) suggest that this degree will be modestly popular among majors at the college. A survey conducted in January 2009 of 230 students enrolled in mathematics courses above the level of MATH 1210 at Dixie State showed substantial interest in pursuing degrees in mathematics or mathematics education: Of 230 students surveyed, 26 indicated an interest in math education; 35 were interested in majoring in mathematics; and 21 were interested but undecided as to which degree to pursue, mathematics or math education. The chart below projects enrollment for the first five years of the program:

Year	Student Headcount	# of Faculty	Student-to-Faculty Ratio	Accreditation Req'd Ratio
1	10	1.0	10:1	N/A
2	15	1.0	15:1	N/A
3	20	1.5	13:1	N/A
4	30	1.5	15:1	N/A
5	40	2.0	20:1	N/A

SECTION III: Need

Program Need

The mathematics degree is a foundational degree that is universally offered at baccalaureate institutions. Because mathematics is a high-demand skill sought in many sectors of business, science, and government, mathematics majors are likely candidates for key positions in traditional and emerging job markets; more important, the nationwide emphasis at the state and federal levels on increasing math knowledge and abilities among school-age children in the United States highlights the need for highly qualified mathematics teachers. According to the Utah Consortium for Science and Mathematics Education, the National Science Foundation reports that "eighty percent of jobs in the next decade will require some form of math and science." [1]

Labor Market Demand

In spite of the recent economic downturn, southern Utah population continues to grow; even in a difficult economy, Washington County is among the fastest-growing metropolitan areas in Utah and roughly, over the first five years of the proposed degree, Washington County's population is projected to grow by 25% (to nearly 200,000).[2] Dixie State College is the sole state institution of higher education in the county and will be increasingly counted upon to provide the trained and educated workers that this growth will require.

Utah and the United States need a workforce trained to meet the challenges of a changing world. Workforce projections as recently as 2009 by the U.S. Department of Labor show that by 2014, fifteen of the twenty fastest-growing occupations will require significant mathematics training to successfully compete for a job. Without a solid foundation in mathematics, science, technology, and engineering, students will not be qualified for many jobs in the workplace, including many jobs beyond traditional engineering or science-related jobs.[3] *E-School News* (2009) reports that the United States will need 400,000 new graduates in

[1] Utah Consortium for Science and Mathematics Education, 2010.
http://www.scimathed.utah.edu/index.php?option=com_content&view=article&id=18&Itemid=59

[2] Utah Department of Workforce Services, Occupational Projections.

[3] *Fewer students seek tech-related degrees,* (2009, June 24), E-School News.
http://www.eschoolnews.com/news/top-news/?i=54247;_hbguid=900b8324-daf2-46d3-b631-ca35461b9736 .

mathematics, science, technology, and engineering by 2015, according to the U.S. Bureau of Labor Statistics, and professional information technology (IT) jobs will increase 24% between 2006 and 2016.[4]

In its "Revised Forecast for 2008-2013,"[5] Innovation Network notes that despite the dramatic job losses registered across the U.S., job creation will remain strong in certain fields. Projections for the top job creators, 2010-2015, include in rank order the following mathematics-based professions:

- Computer software engineers, applications
- Industrial engineers
- Computer software engineers, systems software
- Computer systems analysts
- Industrial engineering technicians
- Mechanical engineers

Student Demand

In January 2009, the Mathematics Department surveyed students in all courses, MATH 1210 or above. Of 230 students surveyed, 80 students indicated that they would be likely to major or would seriously consider majoring in mathematics or math education. The actual survey indicated twenty-six students interested in math education; another thirty-five students were interested in a mathematics degree; twenty-one students were interested but undecided as to which degree, math or math education, they preferred. In the Spring of 2010, the Office of Institutional Research conducted a survey of end-of-term students regarding their "areas of interest" at Dixie State, and twenty-one students indicated mathematics as their interest.

Similar Programs Utah State University, Weber State University, University of Utah, Utah Valley University, and Southern Utah University—all of the baccalaureate-degree-offering institutions in the USHE—offer an undergraduate degree in mathematics; in fact, some institutions offer separate degrees in Statistics, Pure Mathematics, Applied Mathematics, and Mathematics Education. This begs the question: Why does Dixie State need to offer a degree so readily available at sister institutions? The answer, simply put, relates to the two crucial issues of location and mission.

First, Dixie State primarily serves the growing student population of Washington and Kane Counties, and this student population typically does not go elsewhere for post-secondary education in any significant numbers. The 8,000-plus students at Dixie need and deserve the opportunity to benefit from higher education in the most cost-effective and convenient manner possible, and Dixie State College is the logical supplier and the college of choice for the vast majority of residents in Washington and Kane Counties.

Second, Dixie State's mission to offer baccalaureate programs "in core or foundational areas consistent with four-year colleges" mandates that the College develop and deliver a degree in mathematics as one of the disciplines most profoundly instrumental to development of skills in quantitative reasoning, logic, analysis, and critical thinking, which are widely recognized skills at the heart of education. Furthermore, a robust mathematics program is essential in preparing the students in other programs such as nursing and allied health careers, business, accounting and finance, and computer science and information technology.

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[4] *U.S. behind in doubling science grads,* E-School News, (2009, July 18), http://www.eschoolnews.com/news/top-news/?i=54607.

[5] Talent Gap Analysis Report: Preparing Our Workforce" http://www.innovationphiladelphia.com/initiatives/dvin/UpdateNarrativeFNL.pdf

Collaboration with and Impact on Other USHE Institutions

Mathematics faculty at Dixie State have carefully reviewed the mathematics programs of USHE institutions and used their program curricula as the models for the DSC program. Informal collaborations with other USHE institutions took place at the most recent Mathematics Major's Meeting in Salt Lake City; as a result, Dixie State expects that impact on sister institutions will be minimal, if it exists at all, primarily because 70% of Dixie's students are Washington County residents, and these students traditionally don't go elsewhere for undergraduate education, regardless of availability of degree options at other schools.

Benefits

Baccalaureate completion rates in Utah are declining, and one probable contributor is access. The current completion rate of bachelors' degrees for citizens in the DSC service area, among the lowest in the nation, can only be viewed as a sobering call to action. The costs for Washington County students to travel to another institution appear be a substantial hindrance to baccalaureate completion. Approving the proposed degree will improve access for the growing population of southwest Utah. Also, the degree will allow DSC to develop further its baccalaureate mission and to provide a number of educated employees for regional and local employers.

Consistency with Institutional Mission

DSC's mission promotes offering "core and foundational" degrees, and the institution's academic plan includes baccalaureate degrees in mathematics and the sciences as essential components in achieving the mission. These degrees are vital core components of a comprehensive four-year institution's offerings. A careful review of peer institutions nationally indicates that DSC cannot be considered to have a foundation-level array of baccalaureate offerings without the important addition of mathematics, engineering, physics and other science degrees. Students well-trained in these areas are vitally important to the economic health of the community, and providing this positive community impact is consistent with a key element of DSC's mission, to "meet the demands of business and industry. . .and provide leadership and support to economic development" (DSC Mission, 2005).

Section IV: Program and Student Assessment

Program Assessment

The Mathematics Department has established five program goals, in alignment with the Mathematical Association of America's (MAA) recommendations. Furthermore, in addition to the Regent-mandated Three-Year Reports and cyclical Program Reviews, student learning outcomes are measured by the Mathematics Department faculty in a number of ways.

There will be three primary components of assessment at the program level: Student satisfaction will be measured by a questionnaire given to all graduating seniors and follow-up surveys of graduates will be conducted at the one-year and five-year anniversaries of graduation. At the suggestion of consultant Dr. Virginia Buchanan, DSC mathematic faculty adopted the recommendations of the MAA in revising its program goals and learning outcomes. In addition to participation in and successful completion of a senior capstone seminar, all majors will take the Educational Testing Service (ETS) graduate exam in their senior year; this nationally-standardized exam will provide program-level assessment as resulting student scores will be analyzed in relation to the program outcomes. Employer satisfaction will be measured in surveys to be developed. Students' preparation for graduate school will be quantitatively assessed by analysis of

examination scores, GPAs, and scores on the ETS exam and other standardized tests, such as the Graduate Record Examination.

Faculty and advisors will monitor students' progress and satisfaction through such traditional indicators as GPA, enrollment numbers, retention, senior surveys at graduation and the National Survey of Student Engagement (NSSE) results, and required periodic one-on-one meetings with students. Other quantitative and qualitative indicators, such as the number and quality of undergraduate research projects undertaken by majors, will be tracked and analyzed to assess the execution of program goals.

Student and faculty input and indicators, such as GPA, enrollment numbers, program retention, post-graduation placement, acceptance to graduate programs, and graduation exit surveys, will be compiled and analyzed. A group chosen from faculty in the allied departments, prospective employers, and program graduates will be asked to form an advisory committee to evaluate the program's suitability and rigor. The external evaluators will be encouraged to offer criticism and possible directions for program improvements.

Expected Standards of Performance

Central to this degree proposal is a commitment to student assessment and, ultimately, to the production of quality graduates. Graduates of the mathematics program must complete 45 credits of coursework directly related to mathematics knowledge, including a 10-credit calculus-based physics sequence.

Each course in the curriculum will have identified learning outcomes that must be achieved upon completion of the course. The ability to formulate mathematical proofs is one learning outcome in all courses numbered above 3000, as this is a necessary skill for graduate work in mathematics.

Section V: Finance

Budget:

Financial Analysis Mathematics					
	Year 1	Year 2	Year 3	Year 4	Year 5
Students					
Projected FTE Enrollment	4	6	10	15	20
Cost Per FTE	11,625	7,750	6,855	4,735	5,145
Student/Faculty Ratio	10:1	15:1	13:1	15:1	20:1
Projected Headcount	10	15	20	30	40
Projected Tuition					
Gross Tuition	14,200	21,000	37,000	57,000	78,000
Tuition to Program	14,200	17,000	22,000	23,000	30,000
5 Year Budget Projection					
	Year 1	Year 2	Year 3	Year 4	Year 5
Expense					
Salaries & Wages	38,000	38,000	56,000	58,000	83,600
Benefits	8,500	8,500	12,500	13,000	19,300
Total Personnel	46,500	46,500	68,550	71,000	102,950
Current Expense					
Travel	1,500	1,500	1,500	2,000	2,200

Financial Analysis Mathematics					
	Year 1	Year 2	Year 3	Year 4	Year 5
Capital					
Library Expense					
Total Expense	$48,000	$48,000	$70,050	$93,000	$ 105,150
Revenue					
Legislative Appropriation	31,000	31,000	48,000	50,000	65,000
Grants					
Reallocation					
Tuition to Program	$17,000	$17,000	$22,050	$23,000	$30,000
Total Revenue	$48,000	$48,000	$70,050	$93,000	$105,150
Difference					
Revenue-Expense	$ 0	$ 0	$ 0	$ 0	$ 0
Comments					

Funding Sources

The funding for the proposed degrees will come from institutional funds from state allocations and new tuition revenue, depending on future budgetary conditions. External funding sources will be vigorously pursued as conditions allow.

Reallocation

The approval of this program will require no internal reallocation of resources.

Impact on Existing Budgets

No existing budgets will be impacted by this program.

Appendix A: Program Curriculum

MATHEMATICS DEGREE			
Course Number	**Course Name**	**Credits**	**Pre-requisite**
MATH 1210	Calculus I	5	MATH 1050/1060 OR 1065
MATH 1220	Calculus II	4	MATH 1210
MATH 2210	Multivariable Calculus	3	MATH 1220
MATH 2270	Linear Algebra	3	MATH 1210
MATH 2280	Ordinary Differential Equations	3	MATH 1220
MATH 2200	Discrete Mathematics	3	MATH 1210
MATH 3200	Introduction to Analysis	3	MATH 2210/2200
MATH 3400	Probability and Statistics	3	MATH 1220
MATH 3900	Number Theory	3	MATH 2200
MATH 4000	Foundations of Algebra	3	MATH 2200
MATH 4900	Senior Capstone Seminar	3	Math Major and Senior Standing
	TOTAL SEMESTER CREDITS	**36**	(Must earn a "C" or better in each course)
	ELECTIVE MATH COURSES (Choose 12 credits)		
MATH 3000	History of Mathematics	3	MATH 1220
MATH 3100	Euclidean/ Non-Euclidean Geometry	3	MATH 2200
MATH 3210	Introduction to Analysis II	3	MATH 3200
MATH 3500	Numerical Analysis	3	MATH 2270 & 2280
MATH 4010	Abstract Algebra	3	MATH 4000
MATH 4100	Introduction to Topology	3	MATH 2200 & 2210
MATH 4200	Complex Analysis	3	MATH 3200
	TOTAL SEMESTER CREDITS	**12 of 21**	(Must earn a "C" or better in each course)
	TOTAL MATH CREDITS	**48**	
	OTHER REQUIRED COURSES		
PHYS 2210	Physics for Scientists/Engineers I	4	MATH 1210
PHYS 2215	Physics Lab I	1	w/PHYS 2210
PHYS 2220	Physics for Scientists/Engineers II	4	PHYS 2210
PHYS 2225	Physics Lab II	1	w/PHYS 2220
CS 1400	Foundations of Programming	3	
	TOTAL SEMESTER CREDITS	**13**	(Must earn a "C" or better in each course)
	ELECTIVE CREDITS (16 MUST BE UPPER DIVISION)	**34**	
	TOTAL GE COURSES CREDITS	**25**	
	TOTAL DEGREE CREDITS	**120**	

Appendix A, continued: Course Descriptions

MATH 1001 First Year Experience - Intro to Math 1.00 CR: MATH 1001 is an orientation course created to help students succeed in the math major. It is also designed to help new freshman and returning students to make a successful transition to being a college student. The primary objective of this course is to provide you with the resources you will need to succeed in your college career, particularly in your math courses. 2 lecture hours per week.

MATH 1010 Intermediate Algebra 4.00 - 5.00 CR: Designed for students who need preparatory work before entering the minimum courses that fulfill the general education math requirement. Concepts emphasized in this course include the properties of the real number system, sets, functions, graphs, algebraic manipulations, linear and quadratic equations, systems of equations, and story problems. Students will be expected to reason mathematically and solve mathematical problems. This course is a lecture course and will include homework assignments, quizzes, tests, and a comprehensive final exam. Successful completion of the course gives students good preparation for college-level math courses. Satisfies prerequisites for MATH 1030, 1050, 1090, and BIOL 2400. Prerequisite: MATH 0990 (with an earned grade of C or better) or ACT score of 18 or higher within two years of enrollment. 4 or 5 lecture hours per week.

MATH 1030 Quantitative Reasoning *MA 3.00 CR: This course is designed for general studies or liberal arts students majoring in humanities or other non-science programs seeking only an associate degree or certificate. The focus of the course is on the development of analytical problem solving skills through the application of various mathematical concepts to real-life problems. Topics of study include: modeling with algebra; geometry; logic; financial math; right triangle trigonometry (indirect measurement); probability and statistics. Successful completion of this course will satisfy the general education math requirements. Students who wish to enter four year programs are strongly encouraged to check with departments at transfer schools to determine program compatibility. Although this course transfers to all colleges and universities in Utah, it does not commonly meet specific department requirements. Prerequisite: Math 1010 (with an earned grade of C or better) or ACT score of 23 or higher. 3 lecture hours per week.

MATH 1040 Intro to Statistics *MA 3.00 CR: Fulfills General Education Mathematics requirement for students majoring in Communication, Social & Behavioral Sciences, Fine Arts, or Liberal Arts. Introduction to basic concepts and methods used in statistical data analysis includes descriptive statistics, sampling, and inferential methods while emphasizing problem solving and critical thinking. Microsoft Excel is used to perform statistical calculations, organize and analyze data, and construct graphs. Required for Utah Level 2 Math Endorsement. Students are cautioned to check degree and/4 transfer requirements before taking this course. Successful completes satisfy Mathematics prerequisites for PSY 3000. Prerequisite: Math 1010 (with an earned grade of C or better) or placement test score of 23 or higher. 3 lecture hours per week.

MATH 1050 College Algebra/Pre-Calculus *MA 4.00 - 5.00 CR: Designed for students majoring in science and engineering who need a calculus and/or physics series. Review of fundamental algebra. Polynomial and rational functions will be explored. Introduction into exponential and logarithmic functions and their applications. Trigonometric functions dealing with graphs, identities and equations including inverse functions. This course is a lecture course with homework assignments, quizzes, tests, and a comprehensive final exam. Successful completion of the course prepares students for MATH 1060. Satisfies prerequisites for MATH 1060, MATH 1100 and MATH 2010. Math 1050 is required for Utah Teacher Certification. Prerequisite: MATH 1010 (with an earned grade of C or better) or ACT score of 23 or higher within two years of enrollment. 4 to 5 lecture hours per week.

MATH 1060 Trigonometry *MA 3.00 CR: Continuation of MATH 1050. Further discussion in trigonometry and its applications. Analytic Geometry including conic sections, systems of equations and inequalities and partial fractions. Introduction into discrete algebra including sequences and series and the binomial theorem. This course is a lecture course with homework assignments, quizzes, tests, and a comprehensive final exam. Successful completion of the course provides students with the concepts needed to continue in a Physics or Calculus series. Satisfies prerequisites for MATH 1210 and PHSX 1110. Prerequisite: Math 1050 (with an earned grade of C or better) or equivalent. 3 lecture hours per week.

MATH 1065 Precalculus w/Trigonometry *MA 5.00 CR: Designed for students who need an in depth review of precalculus and trigonometry before entering trig-based calculus. This course reviews the mathematical concepts taught in Math 1050 and Math 1060. Students who choose to apply Math 1065 toward graduation cannot also count Math 1050 or Math 1060. Prerequisite: Within the previous two years a placement test score equivalency of 25 or better OR within the past two years Math 1010 with an earned grade of B or better OR successful precalculus experience more than two years ago. 5 lecture hours per week.

MATH 1100 Business Calculus *MA 3.00 CR: Designed for students majoring in business, life sciences, certain computer science emphases, and certain allied health programs who are required to take a one semester calculus course. Concepts emphasized in this course include functions, modeling, differentiation, applications of differentiation, exponential and logarithmic functions, integration, applications of integration, and functions of several variables. Course includes; lectures, homework assignments, quizzes, tests, and a comprehensive final exam. Successful completion of the course provides students with the required calculus techniques that satisfy all areas requiring just one quarter of calculus. Prerequisite: Math 1050 or Math 1090 (with an earned grade of C or better) or ACT score of 25 or higher. 3 lecture hours per week.

MATH 1210 Calculus I *MA 5.00 CR: Designed for students intending to earn an Associate of Science degree and then transfer to a mathematics, engineering program, or other calculus-based major at a four-year institution. Students will gain a basic understanding of calculus, the mathematics of motion and change. Topics include limits and continuity, differentiation, applications of differentiation, integration, applications of integration, derivatives of exponential functions, logarithmic functions, inverse trigonometric functions, hyperbolic functions and related integrals. Students must have a working knowledge of college algebra and trigonometry, and a graphing calculator is strongly recommended. Course includes lecture and homework assignments, quizzes, tests and a final comprehensive exam. Successful completion of the course prepares students for Calculus II. Satisfies prerequisites for MATH 1220 and PHSX 2210. Prerequisites: MATH 1050 and MATH 1060, or MATH 1065 (with an earned grade of C or better) or ACT score of 26 or higher. (Math 1060 is strongly recommended for all students.) 5 lecture hours per week.

MATH 1220 Calculus II *MA 4.00 CR: This course is the continuation of MATH 1210. Topics covered includes arc length, area of a surface of revolution, moments and centers of mass, integration techniques, sequences and series, parameterization of curves and polar coordinates, vectors in 3-space, quadric surfaces, and cylindrical and spherical coordinates. Course includes lecture, homework assignments, quizzes, tests and final comprehensive exam. Successful completion of the course prepares students for MATH 2210. Prerequisite: Math 1210 (with an earned grade of C or better) or equivalent. 4 lecture hours per week.

MATH 1800 Mathematics Work Experience 1.00 - 3.00 CR: Cooperative Education relates the classroom to the employment community. Those with a designated major and a vocational or career interest may be assisted in locating employment that relates to classroom studies. If a student has approved employment, they may be eligible for academic credit based upon the completion of structured learning objectives.

Cooperative Education is available in all divisions. Permission must be obtained from the director of cooperative education before registration. Students are limited to four cooperative education credit courses or 12 cooperative education credits. Fall section.

MATH 1810 Mathematics Work Experience 1.00 - 3.00 CR: Cooperative Education relates the classroom to the employment community. Those with a designated major and a vocational or career interest may be assisted in locating employment that relates to classroom studies. If a student has approved employment, they may be eligible for academic credit based upon the completion of structured learning objectives. Cooperative Education is available in all divisions. Permission must be obtained from the director of cooperative education before registration. Students are limited to four cooperative education credit courses or 12 cooperative education credits. Spring section.

MATH 1820 Mathematics Work Experience 1.00 - 3.00 CR: Cooperative Education relates the classroom to the employment community. Those with a designated major and a vocational or career interest may be assisted in locating employment that relates to classroom studies. If a student has approved employment, they may be eligible for academic credit based upon the completion of structured learning objectives. Cooperative Education is available in all divisions. Permission must be obtained from the director of cooperative education before registration. Students are limited to four cooperative education credit courses or 12 cooperative education credits. Summer section.

MATH 2010 Math for Elem Teachers I 3.00 CR: The first course in a two-semester sequence in mathematics appropriate to the needs of the elementary/middle school teacher. Topics include: problem solving, sets, numeration systems, whole numbers, algorithms of arithmetic, number theory, rational numbers and decimal numbers. Required for prospective elementary school teachers. Prerequisite: Math 1050 (with an earned grade of C or better) and is required for Level 1 Math Endorsement and Elementary (K-8) Certification. 3 lecture hours per week.

MATH 2020 Math for Elem Teachers II 3.00 CR: A continuation of Math 2010. Topics include: real numbers, statistics, probability, geometry, measurement, and algebra. Required for prospective elementary school teachers. Prerequisite: MATH 2010 with an earned grade of C or better. 3 lecture hours and 2 practicum hours per week.

MATH 2200 Discrete Mathematics 3.00 CR: Designed primarily for students majoring in computer science. Topics include logic (including Boolean), set theory, functions, prepositional calculus, graph theory, combinatorics and counting methods. Prerequisite: Math 1100 or 1210 (with an earned grade of C or better). (Offered spring semesters.) 3 lecture hours per week.

MATH 2210 Multivariable Calculus *MA 3.00 CR: This course is the continuation of MATH 1220. Includes partial derivatives, gradient vectors, Lagrange multipliers, multiple integrals, line integrals, Green's Theorem, surface integrals, the Divergence Theorem, and Stokes' Theorem. MathCAD - Calculus will also be introduced in computer labs. Course includes lecture and homework assignments, quizzes, tests and a comprehensive final. Successful completion of the course prepares students for all areas that require calculus as a prerequisite. Satisfies prerequisites for ENGR 2000. Prerequisite: Math 1220 with an earned grade of C or better. 3 lecture hours per week.

MATH 2270 Linear Algebra 3.00 CR: Designed for mathematics and pre-engineering majors. Covers matrix and vector analysis and systems of equations with applications, linear dependence and independence, matrix algebra and invertibility, determinants and their applications, Cramer's Rule, diagonalization, eigenvalues and eigenvectors, linear transformations (kernel and range), inner product and

orthogonality. Covers vector spaces and subspaces, including null and column and bases. Introduces basic proof theory. Uses lecture, text assignments, student presentations and discussions. Successful completion enhances students' post-calculus mathematical skills. Prerequisite: Math 1210 with an earned grade of C or better. 3 lecture hours per week.

MATH 2280 Ordinary Differential Equation 3.00 CR: Designed for mathematics and pre-engineering majors. Covers methods of solving ordinary differential equations with applications. Separation of variable, homogeneous and non-homogeneous, exact, first and higher order, integrating factors, substitution methods, linear and non-linear, complex characteristic roots, variation of parameters, undetermined coefficients (superposition and annihilator approach) and Euler-Cauchy will be covered. Systems of equations, power series solutions, and the Laplace transform will be introduced. Uses lecture, text assignments, student presentations, and class discussion. Successful completion enhances students' post-calculus mathematical skills with applications. Prerequisites: Math 2210 and Math 2270 with an earned grade of C or better. (Concurrent enrollment allowed.) 3 lecture hours per week.

MATH 2989 TI-89 Calculator Skills 1.00 CR: A course designed specifically to aid students in using the TI-89 calculator. A study guide will be provided, with demonstrations projected overhead for students to follow as they learn through hands-on experience. Covered features include basic computation, matrices, graphing, and calculus applications. The TI-92 and TI Voyage 200 calculators are similar to the TI-89 and are also acceptable tools for the course. Prerequisite: Own or have access to TI-89, TI-92 or TI Voyage 200 calculator. One lecture hour per week.

MATH 3000 History of Mathematics 3.00 CR: Designed for all interested students. This course is a brief survey of the history of mathematics and its impact on world culture. Emphasis will be on the principal ideas of importance in the development of the subject, mathematical motivations and applications. This course partially fulfills requirements for Mathematics Endorsements Level 4 through the Utah State Office of Education. Offered upon sufficient demand. Prerequisite: MATH 1220 (with an earned grade of C or better). 3 lecture hours per week.

MATH 3100 Euclidean/Non-Euclidean Geometry 3.00 CR: For pre-service Mathematics educators, but open to all interested students. Includes axiomatic development of Euclidean and non-Euclidean geometry. Computer-based GeoGebra program is used. Required for Utah Level 3 and 4 Math Endorsements. Prerequisite: MATH 2200 and (with an earned grade of C or higher). 3 lecture hours per week.

MATH 3200 Intro to Analysis 3.00 CR: Designed for those interested in advanced mathematics. This course introduces the construction of rigorous proofs of mathematical claims in beginning analysis. This course partially fulfills requirements for Mathematics Endorsements Level 3 and 4 through the Utah State Office of Education. Offered upon sufficient demand. Prerequisite: MATH 2210, MATH 2280 and MATH 2300 (with an earned grade of C or better). 3 lecture hours per week.

MATH 3210 Intro to Analysis II 3.00 CR: Continuation of MATH 3200. Advanced Multivariable Calculus. Topics include continuity, differentiation, chain rule, Riemann integration, Fubini's theorem, change of variable formula. Prerequisite: MATH 3200. 3 lecture hours per week.

MATH 3400 Probability and Statistics 3.00 CR: For students in majors that require mathematics-based statistics. Study of probability theory and mathematical statistics including applications in which Microsoft Excel and TI-83/84 calculators are used extensively. Required for Utah Level 3 and 4 Math Endorsements. Prerequisite: MATH 1220 (Grade C or higher). SP (odd years)

MATH 3500 Numerical Analysis 3.00 CR: Includes numerical solutions of nonlinear equations, interpolation and approximation, numerical integration and differentiation, and solutions of linear systems, numerical solutions of ordinary and partial differential equations, using Maple software to implement various algorithms numerically. Prerequisites: MATH 2270; AND MATH 2280. FA (even years)

MATH 3900 Number Theory 3.00 CR: Overview of number theory and its applications, including the integers, factorizations, modular arithmetic, congruencies, Fermat's and Euler's Theorems, diophantine equations, cryptography, and RSA algorithm. The computer-based Pari-GP program is used. This course or MATH 3000 is required for Utah Level 4 Math Endorsement. Prerequisite: MATH 2200. SP (even years)

MATH 4000 Foundations of Algebra 3.00 CR: Designed for students in all math-related majors. This course covers an introduction to algebraic systems including groups rings, fields and sets. This course partially fulfills requirements for Mathematics Endorsements Level 3 and 4 through the Utah State Office of Education. Offered upon sufficient demand. Prerequisite: MATH 1220 and MATH 2300 (with an earned grade of C or better). 3 lecture hours per week.

MATH 4010 Abstract Algebra 3.00 CR: Continuation of MATH 4000. Topics include Sylow Theory for finite groups, Galois Theory, factorization in commutative rings. Prerequisite: MATH 4000. 3 lecture hours per week.

MATH 4100 Intro to Topology 3.00 CR: An overview of elementary point-set topology. Topics include topological spaces, compactness, connectedness, metric spaces, and Hausdorff spaces. Prerequisites: MATH 2210, MATH 2300. 3 lecture hours per week.

MATH 4200 Intro to Complex Analysis 3.00 CR: An overview of basic theory and applications of complex variables. Topics include analytic functions, contour integration, and conformal mappings. Prerequisite: MATH 3200. 3 lecture hours per week.

MATH 4500 Methods/Teaching Secondary School Math 3.00 CR: Designed for pre-service educators, this course covers methods, remedial instruction, and curriculum development for secondary school mathematics, including applications of calculators and computers in mathematics. Technology used includes graphic calculators, spreadsheets, Internet searching, and computer-based geometry software. Required for Utah Level 2, 3, and 4 Math Endorsements. Prerequisite: MATH 1210 (Grade C or higher). FA (even years)

MATH 4900: Senior Capstone Seminar 3.00 CR Required of all Mathematics majors in the senior year. Emphasizes the ability to analyze and communicate mathematically through projects to include researching topics, summarizing journal articles, using a technical documentation system such as LaTeX or Equation Editor, and making oral class presentations. Preparation for and completion of standardized exit exam is required. Course fee required. Prerequisite: Senior standing; and Mathematics major. SP

New Courses To Be Added: The Mathematics Program does not anticipate adding any new classes in the next five years. All courses necessary for the proposed degree are currently approved and in the curriculum.

Appendix B: Program Schedule

Hypothetical Program Schedule, Baccalaureate of Science in Mathematics

Semester 1	
Course	Credits
MATH 1210, Calculus I	5
MATH 1001, First Year Experience	1
CIS 1200, Computer Literacy	3
American Institutions GE	3
Fine Arts/Communication GE	3
Total	15

Semester 2	
Course	Credits
MATH 1220, Calculus II	4
ENGL 1010, Introduction to Writing	3
LIB 1010, Information Literacy	1
Life Science GE	3
Social Science GE	3
Elective	1
Total	15

Semester 3	
Course	Credits
MATH 2270, Linear Algebra	3
MATH 2200, Discreet Math	3
PHYS 2210, Physics for Scientists/Engineers	4
PHYS 2215 Physics Lab	1
ENGL 2010, Intermediate Writing	3
Total	15

Semester 4	
Course	Credits
MATH 2280, Ordinary Differential Equations	3
MATH 2210, Multivariable Calculus	3
Literature/Humanities GE	3
PHYS 2220 w/Lab, Physics for Scientists and Engineers II	4
PHYS 2225, Physics Lab II	1
Elective	1
Total	15

Semester 5	
Course	Credits
MATH 4000, Foundations of Algebra	3
MATH 3500, Numerical Analysis	3
CS 1400, Foundations of Programming	3
Elective	3
Elective	3
Total	15

Semester 6	
Course	Credits
MATH 3400, Probability and Statistics	3
MATH 3100, Euclidean/Non-Euclidian Geometry	3
MATH 4010, Abstract Algebra	3
Elective	3
Elective	3
Total	15

Semester 7	
Course	Credits
MATH 3200, Introduction to Analysis	3
MATH 3000, History of Mathematics	3
Electives	5
Upper Division Electives	4
Total	15

Semester 8	
Course	Credits
Upper Division Electives	12
MATH 4900, Senior Capstone Seminar	3
Total	15

Total Credits = 120

Appendix C: Faculty

Name	Position	Degree/Year	Area	Institution
Scott L. Mortensen	Assoc. Prof., Dept. Chair	M.Ed., 1991	Mathematics	Utah State Univ.
Costel Ionita	Assoc. Prof.	Ph.D., 2004	Mathematics	Louisiana State Univ.
Clare Banks	Assoc. Prof.	Ph.D., 2005	Mathematics Education/Statistics	U. of Northern Colorado
Jie Liu	Assoc. Prof.	Ph.D., 2006	Mathematics	U of Texas, Arlington
Taylor A. Jensen	Instructor, Tenure-track	Ph.D., 2009	Mathematics Education	Montana State Univ.
Lynn R. Hunt	Assoc. Prof.	MS, 1984	Mathematics, Computer Ed	Oregon State Univ.
Ross Decker	Assoc. Prof.	MS, 1994	Mathematics Education	Brigham Young Univ.
Barbara Blythin	Asst. Prof.	MS, 1989	Mathematics	U. of Nevada, LV
Gordon A. Russell	Asst. Prof.	MS, 1963	Mathematics Education	Utah State Univ.
Kathryn Ott	Lecturer/ Advisor (0.5)	MS, 1981	School Psychology	Brigham Young Univ.
Max Rose	Adjunct	Ph.D., 1976	Math, Chemistry	Brigham Young Univ.
Ross Nelson Taylor	Adjunct	MA, 1966	Natural Science	Brigham Young Univ.
Robert J. Comeford	Adjunct	M.Ed., 1980	Secondary Ed, Mathematics	Utah State Univ.
Paul Brooks	Adjunct	MA, 1970 MA, 1977	Mathematics, School Admin.	San Diego State Univ.
Odean Bowler	Adjunct	JD, 1995; BS, 1992, 1988	Computer Science, Electr. Engineering	BYU; Weber State; U of U
Kristine A. Cunningham	Adjunct	M. Ed., 2005	Mathematics Education	Southern Utah Univ.
Robert T. Reimer	Adjunct	M.Ed., 1997	Sec. Education, Math	Southern Utah Univ.
Michele Poast	Adjunct	MS, 1999	Mathematics	Fayetteville State Univ.
Barbara A. Talley	Adjunct	MS, 1998	Computer Science	Texas A&M
Craig Seegmiller	Adjunct	MBA, 1990, BA, 1986	Business, Math Education	Thunderbird School of Global Mgmt.; BYU
Violeta A. Ionita	Adjunct	MS, 2002 BS, 1995	Mathematics	Louisiana State U.

Appendix D: Library and Information Resources

Among other resources, the library has the following databases relevant to the Math degree:

Global Search: a meta-search engine that searches multiple databases for various topics. It includes catalogs, databases and online resources. This search engine will be replaced soon by a similar search engine to be selected by the Utah Academic Library Consortium.

Academic Search Premier (EBSCO Host): a scholarly, multi-disciplinary database with full text coverage of 4600 journals in a range of subjects. This database is a good starting point for almost any topic search.

American Mathematical Society Journals: a searchable database that provides full text access to articles published in the journals of the AMS.

Annual Reviews: full text of various annual (subject/discipline) reviews online.

JSTOR: a scholarship journal archive that provides image and full text access to archival (more than five years old) scholarly journals in various subject areas.

MathSciNet: access to over 50 years of mathematical reviews and data. The database is a finding source for citations for scholarship in this discipline.

Project Muse: full text of over 40 scholarly journals from the Johns Hopkins University Press.

Web of Science: consolidated searching of citation search engines and multi-disciplinary listings of articles in 8500 major scholarly journals.

Other useful resources include the library catalog, electronic books, Utah's catalog, full-text periodicals list, and interlibrary loan.

Physical materials in the Browning Library include a mathematics education physical periodicals list (at least one year's worth of issues), the **Journal for Research in Mathematics Education**, **Mathematics Teacher**, and the **National Council of Teachers of Mathematics News Bulletin**.

There are 41 math video recordings and 28 CD-ROMS. Other physical materials include a total 482 titles on the study and teaching of mathematics.

Appendix E: External Consultant's Report

To: Department of Mathematics
Dixie State College of Utah
From: Virginia M. Buchanan
Professor and Chair, Department of Mathematics
Hiram College
Date: August 16, 2010

RE: Dixie State College Mathematics Bachelor's Degree Proposal

This memorandum contains my review of the Dixie State College proposal for a baccalaureate mathematics degree. Please note that the draft that I received does not include Appendix E, so I do not know what learning outcomes the Mathematics Department has identified for each course in the program. Nevertheless, the proposed mathematics program overall appears to be a good one. Students who complete the program will have experienced the breadth of mathematics and will have studied the foundational areas of mathematics. The graduates of the program will be prepared for further study and for a variety of careers. I have a few suggestions for strengthening the proposal. I hope that my comments will be useful to you.

Approximately every ten years, the Mathematical Association of America (MAA) publishes a set of guidelines for programs and departments in the mathematical sciences. A mathematics bachelor's degree program should be consistent with the current guidelines, as stated in the recommendations of the MAA's Committee on the Undergraduate Program in Mathematics (CUPM). The complete set of recommendations is described in detail in the report *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, published by the MAA in 2004.[6] For the most part, the proposed Dixie State College mathematics program follows those recommendations. However, there are four recommendations for which the connections could be strengthened or made more explicit.

The following four recommendations are found in Part II, Section C of the *CUPM Curriculum Guide*.

- *CUPM Recommendation: Courses designed for mathematical sciences majors should ensure that students become skilled at conveying their mathematical knowledge in a variety of settings, both orally and in writing.*[7]

  In the current proposal, it is not clear where students will develop the communication skills described in this CUPM recommendation. The course descriptions of two required courses, MATH 2270 (Linear Algebra) and MATH 2280 (Ordinary Differential Equations), mention student presentations and class discussion. Is oral communication of mathematics emphasized in other

[6] Available at http://www.maa.org/cupm/
[7] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 44

courses? Where is skill in the written communication of mathematics developed? Perhaps the information will be included in Appendix E.

- *CUPM Recommendation: All majors should have experiences with a variety of technological tools, such as computer algebra systems, visualization software, statistical packages, and computer programming languages.*[8]

  The proposal would be strengthened by a description of the use of technology throughout the entire mathematics program. The proposal mentions the use of MathCAD in the MATH 2210 (Multivariable Calculus) course and the requirement of a computer programming course. What technology is used in other courses? For example, is software like GeoGebra or The Geometer's Sketchpad used in MATH 3100? What statistics software is used in MATH 3400?

- *CUPM Recommendation: All majors should be required to study a single area in depth, drawing on ideas and tools from previous coursework and making connections, by completing two related courses or a year-long sequence at the upper level.*[9]

  Although students can obtain the recommended depth through a careful choice of electives, two related courses or a year-long sequence at the upper level is not a requirement in the proposed program. A student who chooses MATH 3000, 3100, 3500, and 4100 as electives will not achieve the recommended depth in a single area. Therefore, I recommend that students be required to include at least one of MATH 3210 (Analysis II), 4010 (Abstract Algebra), or 4200 (Complex Analysis) in their program electives.

- *CUPM Recommendation: All majors should be required to work on a senior-level project that requires them to analyze and create mathematical arguments and leads to a written and an oral report.*[10]

  This recommendation is not addressed in the DSC mathematics proposal. A senior-level project provides students with an opportunity to explore an area in depth, to synthesize material from several courses, and to develop mathematics communication skills. I believe that a required capstone project would strengthen the program.

  DSC's Response: **Dr. Buchanan's suggestions are wise. The current proposal has been enhanced accordingly, with reference to and incorporation of the CUPM standards and with revisions to the existing course descriptions to explicitly describe the technological tools with which students work and learn; furthermore, a senior capstone project requirement has been added. The issue of study-in-depth components of the curriculum is addressed by the intentional selection of an array of mathematics electives which requires**

[8] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 45
[9] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 48
[10] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 48

that any student, by necessity and regardless of mathematics electives choice, is exposed to at least one additional in-depth course sequence .

In addition to my comments above regarding the CUPM recommendations, I have a few suggestions and questions about the proposal:

- The mathematics program requires students to complete a 10-credit calculus-based physics sequence. This requirement is appropriate but strikes me as being a bit old-fashioned. The study of calculus-based physics certainly is the traditional way of introducing students to a significant application of mathematics in a related field. However, modern economics, computer science, statistics, and biology also make significant use of mathematics. A modern, flexible program that can be tailored to individual interests may more attractive to students than the traditional physics requirement.

  DSC's Response: **The College agrees that more flexibility is desirable; the physics series will remain as a required series, but majors will be advised of the availability of appropriate series in computer science, for example. As other series courses in fields such as economics and quantitative chemistry become available, the mathematics department will evaluate their appropriateness as options for majors in this program.**

- Appendix A lists Discrete Mathematics as MATH 2200. However, the course description on page 15 lists Discrete Mathematics as MATH 2300. Is this simply a typographical error, or is the course being redesigned for mathematics majors?

  DSC's Response: **This is simply a typographical error and it has been corrected.**

- The three MAA journals--*The American Mathematical Monthly*, *Mathematics Magazine*, and *The College Mathematics Journal*—are important resources for undergraduate mathematics majors. The list of Library Resources (Appendix D) includes JSTOR, which contains all but the most recent few years' issues of the MAA journals. Do students have ready access to the recent issues, those not available through JSTOR?

  DSC' Response: **Students do have access to MathSciNet and to the American Mathematical Society Journals, but not full-text access to recent issues of the Journals listed. Coverage in JStor for the American Mathematical Monthly is from 1894 to 2006., Mathematics Magazine is covered from 1947 to 2006, and The College Mathematics Journal is from 1984 to 1986. (JStor is an archival database—everything is generally 5 years old or older.) Through the Indexing in MathSciNet, students could locate and request specific journal articles and turnaround for requested articles through ILLiad is 2 to 3 days in general, though students are told to allow a week for delivery. DSC is committed to providing library holdings and commits to continual updates and enhancement of its library and information resources.**

Appendix F: Curriculum Alignment with USHE Institutions

Institution	USU	WEBER	U of U	SUU	DIXIE
Course	Calculus I	Calculus I	Calculus I	Calculus I	Calculus I
	Calculus II	Calculus II	Calculus II	Calculus II	Calculus II
	Calculus III	Calculus III	Calculus III	Calculus III	Calculus III
	Linear Algebra	Linear Algebra	Linear Algebra	Linear Algebra	Linear Algebra
	Diff. Eq.	Diff. Eq.	Diff. Eq.	Diff. Eq.	Diff. Eq.
	Intro. to Alg, Structures	Modern Algebra I		Found of Algebra and Analysis	Found. of Algebra
	Intro. to Modern Algebra	Modern Algebra II		Abstract Algebra	
	Found. of Analysis	Real Analysis I	Found. of Analysis I	Advanced Calculus I	Found. of Analysis
		Real Analysis II	Found. of Analysis II	Advanced Calculus II	
	Discrete Math		Discrete Math	Discrete Math	Discrete Math
	Intro to Analysis I				Found. of Geometry
	Intro to Analysis II				
	Complex Variables			Complex Analysis	
	Theory of Lin Algebra				History of Math
	Intro to Probability			Prob and Stats	Prob and Stats
				Programming	
Electives	9	12	18-24	3	12-21
Physics	8-10	10	8	4	8-10

Appendix G: Program Learning Goals and Outcomes:

Program Goal #1: Develop mathematical thinking and communication skills

Learning Outcomes:

1. Students will practice and demonstrate mathematical principles, gradually developing more sophisticated abilities in mathematical reasoning and problem solving.
2. Students will learn to apply precise, logical reasoning to problem solving.
3. Students will develop persistence and skill in exploration, conjecture, and generalization.
4. Students will read and communicate mathematics with understanding and clarity.

Program Goal #2: Communicate the breadth and interconnections of the mathematical sciences

Teach students, in a clear and understandable manner, the scientific process and fundamental scientific concepts upon which further, life-long scientific understanding can be built.

Learning Outcomes:

1. Students will present key ideas and concepts from a variety of perspectives.
2. Students will employ a broad range of examples and applications to illustrate and motivate the material.
3. Students will make connections to other subjects and apply the course material to these subjects.
4. Students will introduce contemporary topics from the mathematical sciences and their applications.

Program Goal #3: Use technology to support problem solving and to promote understanding at every level of the curriculum

Learning Outcomes:

1. Students will use technology appropriately and effectively as a tool for solving problems.
2. Students will use technology as an aid to understanding mathematical ideas.

Program Goal #4: Provide a broad view of the mathematical sciences

Learning Outcomes:

1. Students will understand that mathematics is an engaging field, rich in beauty, with powerful applications to other subjects, and contemporary open questions.
2. Students will have significant experience with a number of contrasting but complementary points of view, including:
    - Continuous and discrete,
    - Algebraic and geometric
    - Deterministic and stochastic
    - Theoretical and applied
3. Students will study a single area in depth, drawing on ideas and tools from previous coursework and making connections, by completing two related courses or a year-long sequence at the upper level.

4. Students will work on a senior-level project that requires them to analyze and create mathematical arguments and which culminates in a written and an oral report.

Program Goal #5: Encourage and nurture mathematical science majors

Learning Outcomes:

1. Students will receive effective teaching in introductory courses.
2. Students will be carefully advised and will learn about careers in the mathematical sciences.
3. Students will be assigned a faculty mentor and will be actively advised.
4. Students will experience a welcoming atmosphere and opportunities to establish working relationships with peers, tutors, and instructors.

Signature Page

Institution Submitting Proposal: Dixie State College of Utah

School in Which Program Will Be Located: School of Science and Technology

Department in Which Program/ Will Be Located: Mathematics

Program/ Title: Mathematics

Recommended Classification of Instructional Programs (CIP) Code: 27.0101

Certificate, and/or Degree(s) to Be Awarded: Bachelor of Science and Bachelor of Arts

Proposed Beginning Date: Spring Semester 2011

Institutional Signatures:

_____

Scott Mortenson, Department Chair

_____

Dr. Victor Hasfurther, Dean of the School of Science and Technology

_____

Dr. Donna Dillingham-Evans, Chief Academic Officer

_____

Stephen Nadauld, President

Date:_____

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Phone 801.321.7101
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TDD 801.321.7130
www.utahsbr.edu

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Dixie State College of Utah – Bachelor of Science and Bachelor of Arts Degrees in Mathematics Education – Action Item

Issue

Dixie State College requests approval to offer Bachelor of Science and Bachelor of Arts Degrees in Mathematics Education, effective Spring 2011. The program was approved by the Institution's Board Trustees on November 5, 2010.

Background

The proposed degree in Mathematics Education will provide students with the knowledge, skills, and training required to become qualified mathematics educators in secondary schools, grades 6-12, or to continue their own education in graduate studies. Employment prospects are excellent for Mathematics Education Degree students. The Mathematics Education Degree will require students to complete a set of rigorous core courses, which will provide graduates with a foundation of the fundamental areas of calculus, linear algebra, Euclidean/Non-Euclidean geometry, analysis, number theory, probability, and statistics. The Math Education Degree requires the completion of at least 120 semester credits, including 36 secondary education credits. All content courses in the Mathematics Education program will be taught by qualified faculty members of the Department of Mathematics, and Secondary Education courses will be taught by qualified faculty in DSC's Secondary Education Teacher Program (SET), which is nationally accredited through the Teacher Education Accreditation Council (TEAC). The main goal of the program is to prepare highly qualified graduates who can demonstrate knowledge in the mathematics content area by passing the required PRAXIS exams, and who meet the requirements of the DSC's accredited teacher preparation program. Graduates of the Math Education program will be prepared to enter the teaching profession at the secondary level and/or pursue further graduate studies in education.

Recognizing the need for coordination between the mathematics content area and secondary education certification, DSC has established several interlocking connections. One of the standing committees at DSC is the Professional Educator Coordinator Committee (PECC). This committee is directed through the Academic Vice President's Office in consultation with the Department of Education. Members include the Education School's Dean and Chair, the SET Director, and selected deans, faculty, and advisors from

approved undergraduate majors for secondary licensure along with four-year degree programs that are interested in developing an education emphasis. The purpose of the PECC is to plan, coordinate, and evaluate the content, quality and effectiveness of the DSC teacher preparation program. It provides an avenue for discussion and coordination between all parties who have a vested interest in teacher education. The committee reviews program elements, curriculum, field experiences, student concerns, and makes recommendations for improvements.

Faculty and other resources are already in place.

Policy Issues

USHE institutions were supportive of the Mathematics Education proposal. No policy issues were raised.

Commissioner's Recommendation

The Commissioner recommends the Regents review Dixie State College's request for Bachelor of Science and Bachelor of Arts Degrees in Mathematics Education, raise questions, and, if satisfied, approve the request. The Mathematics Education program will be supported by a Mathematics degree program to be approved at this same meeting.

William A. Sederburg, Commissioner

WAS/PCS

Academic, Career and Technical Education, and Student Success Committee

Action Item

Request to Offer Bachelor of Science and Bachelor of Arts Degrees in Mathematics Education

Dixie State College of Utah

Prepared for:
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by
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January 12, 2011

SECTION I: The Request

Dixie State College requests approval to offer Bachelor of Science and Bachelor of Arts degrees in Mathematics Education, effective Spring 2011. The program was approved by the institution's Board of Trustees on November 5, 2010. This degree proposal is accompanied by a proposal to offer Bachelor of Science and Bachelor of Arts degrees in Mathematics.

SECTION II: Program Description

Complete Program Description

The proposed degrees in Mathematics Education will provide students with the knowledge, skills, and training required to become qualified mathematics educators in secondary schools, grades 6-12, or to continue their own education in graduate studies. Employment prospects are excellent for mathematics education degree students. As evidenced by a 2009 Carnegie study,[1] a shortage of math teachers exists throughout the nation, creating increasing demand for new instructors. Likewise, the Washington County School District indicates a need for math and science teachers.

The Mathematics Education degree will require students to complete a set of rigorous core courses which will provide graduates with a foundation of the fundamental areas of calculus, linear algebra, Euclidean/Non-Euclidean geometry, analysis, number theory, probability, and statistics. The Mathematics Education degree requires the completion of at least 120 semester credits, including 36 secondary education credits. Graduates of the proposed program will be prepared to enter the teaching profession at the secondary level and/or pursue further graduate studies in education.

All content courses in the Mathematics Education program will be taught by qualified faculty members of the Department of Mathematics, and the Mathematics Education courses will be taught by qualified faculty in DSC's Secondary Education Teacher Program (SET), which is nationally accredited through the Teacher Education Accreditation Council (TEAC). The main goal of the program is to prepare highly qualified graduates who can demonstrate knowledge in the mathematics content area by passing the required PRAXIS exams, and who meet the requirements of the nationally accredited teacher preparation program.

Recognizing the need for coordination between the mathematics content area and secondary education certification, DSC has established several interlocking connections. One of the standing committees at DSC is the Professional Educator Coordinator Committee (PECC). This committee is directed through the academic vice president's office in consultation with the Department of Education. Members include the Education School's dean and chair, the SET director, and selected deans, faculty, and advisors from approved undergraduate majors for secondary licensure along with four-year degree programs that are interested in developing an education emphasis. The purpose of the PECC is to plan, coordinate, and evaluate the content, quality and effectiveness of the DSC teacher preparation program. It provides an avenue for discussion and coordination between all parties who have a vested interest in teacher education. The committee reviews program elements, curriculum, field experiences, student concerns, and makes recommendations for improvements.

Purpose of Degree

[1] Carnegie Corporation of New York and Institute for Advanced Study, 2009, http://www.opportunityequation.org/

One of the central roles assigned to DSC is to meet the educational needs of Washington and Kane Counties. Given the rapid growth of the area and the infusion of public school-aged children, combined with retirements projected in the Washington County School District, the need for public school teachers continues to grow. Mathematics education and mathematics educators, throughout the county, state, and nation, are projected to be in significant demand as the economy rebounds. The U.S. Bureau of Labor Statistics reports on its website in July 2010 that:

> *Most job openings will result from the need to replace the large number of teachers who are expected to retire over the 2008–18 period. Currently, many school districts have difficulty hiring qualified teachers in some subject areas—most often mathematics, science (especially chemistry and physics), bilingual education, and foreign languages.*[2]

The report goes on to add: "The supply of teachers is expected to increase in response to reports of improved job prospects, better pay, more teacher involvement in school policy, and greater public interest in education."[3]

This degree proposals address the state-wide need for secondary mathematics teachers, as well as critical local need. The expected outcome is that highly-qualified secondary mathematics teachers will be produced, thereby alleviating some of the shortages occurring now and projected to occur in the future based on retirement and teacher turnover.

The proposed degrees target the following students: new freshmen at Dixie State College who wish to obtain secondary education licensure and who wish to teach mathematics; current teachers in the WCSD and outlying areas, such as Kane County, who need additional courses to meet USOE endorsement requirements; and individuals having baccalaureate degrees and higher who have relocated to Washington County and who wish to meet the requirements for secondary teacher licensure in the State of Utah.

Institutional Readiness: With steady and sustained development as a baccalaureate institution, DSC's infrastructure and institutional environment are now fully ready to respond to southern Utah's demand for more varied degrees. Dixie State College now has a decade of experience as a baccalaureate institution, and it boasts an institutional environment appropriate for its role. Thoughtful and sustained attention to seeking and retaining credentialed teaching faculty, enhancing student services and library and technological resources, and funding facilities expansion have poised the institution to successfully add the proposed degrees.

The Department of Mathematics at DSC has been offering upper-division courses each semester for the past four years, and enrollment has increased sharply since the first offerings, with the total number of upper-division students increasing from nine in Spring 2007 to forty-three in Spring 2010. The existing faculty includes experienced educators with doctoral degrees who are qualified to teach upper-division courses, as well as master's-prepared teachers experienced in offering the required lower-division mathematics courses.

Faculty

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[2] http://www.bls.gov/oco/ocos318.htm#projections_data. 14 July 2010.
[3] http://www.bls.gov/oco/ocos318.htm#projections_data. 14 July 2010.

The mathematics faculty at DSC is composed of qualified, experienced, and diverse professors. The existing mathematics faculty includes four members with Ph.D. degrees. Full-time faculty also includes five masters-prepared faculty members whose combined teaching experience at Dixie State totals nearly eighty years. With the addition in the next year of another Ph.D. faculty in mathematics, and with a second Ph.D.-qualified hire expected in the second year of the program, the ratio of faculty with terminal degrees will meet or exceed national benchmarks for four-year colleges and universities. Education courses will be taught by Ph.D.- prepared faculty in the Secondary Teacher Education program. As the program grows, additional faculty may be needed to accommodate growth. See Appendix C for the list of current faculty in mathematics and education (full-time and adjunct) and the qualifications of each.

Staff

The Mathematics Department at Dixie State College currently functions with one 0.74-time secretary and one work-study student, and staffing is sufficient at this time. Currently, the department has a lecturer/ advisor with a 60% instruction-to-40% advisement contract. As the program grows, additional advising personnel will be added.

Library and Information Resources

Dixie State College believes that building library sources is an integral part of program development, and the Browning Library continues to expand appropriate collections for current baccalaureate offerings. The library currently has sufficient titles in mathematics itself, with additional titles in secondary mathematics and an abundance of titles in secondary education. Many of the resources in the library are electronic offerings. Journals in mathematics and math education are on the library shelves, and videos and CDs are also available. The Browning Library is committed to supporting the baccalaureate programs by ordering any material requested.

Admission Requirements

Any matriculated DSC student in good standing with the college is eligible for admission to the major. Declaration of the major is required for admission and is accomplished through the processes defined by the Registrar's Office. Students are admitted to the degree program directly upon declaring the major. To graduate under this program, in addition to the required course work, all mathematics majors are required to receive a "C" or better and an overall GPA of at least 2.0 GPA in major course work. Formal admission to the SET program is somewhat more rigorous: Students must complete all pre-education core classes with a 3.0 GPA or above, and have a minimum of a 2.75 GPA in the most recent completed 30 semester hours. SET also requires a formal group interview with education faculty members.

Student Advisement

The Mathematics Department recognizes that advisement is crucial to student success. The program faculty is in the process of developing an advisement protocol that will guide students from the time they declare the Mathematics Education major to graduation. Each student will be assigned a faculty mentor and will also be directed to an advisor in the Education Department. At the implementation of the degree, the Math lecturer/advisor and SET advisor will serve to assist program majors, and as the program enrollment grows, academic advisement staff will be added as necessary.

Justification for Number of Credits

Graduates will earn a total of 120-126 credits, including a minimum of 45 mathematics credits, 8 required credits in Physics and Computer Science, 36 SET credits, as well as general education and elective

credits. The total credit amount is within the 126 credit hour limit for a BS degree, as mandated by Regents.

External Review and Accreditation

Diana Suddreth, Curriculum and Instruction Secondary Mathematics Specialist at the Utah State Office of Education, reviewed the proposed program and offered several recommendations, to which mathematics department faculty responded. An external consultant, Dr. Virginia M. Buchanan, Professor and Chair of the Mathematics Department at Hiram College, Hiram, Ohio, also evaluated the program proposal; she writes: "the proposed mathematics education program overall appears to be a good one. Students who complete the program will have experienced the breadth of mathematics and will have studied the foundational areas of mathematics. Graduates of the program will be prepared for careers in secondary education and for further study." She also offers several important recommendations, which have been incorporated into the final proposal. Dr. Buchanan's and Ms. Suddreth's recommendations are availabler upon request.

Accreditation of the Mathematics Education program will be incorporated into the institution's established regional accreditation process with all appropriate evaluations and measures to ensure rigor. The Secondary Education Teacher licensure program associated with the degree is approved by the Utah State Office of Education and nationally accredited by the Teacher Education Accreditation Council (TEAC).

Projected Enrollment

Nationwide and local data (described in detail under "Need" and "Market Demand" below) suggest that this degree will be modestly popular among majors at the College. Projected enrollment growth for the program is detailed in the chart under *Market Demand* below. Following are projected student FTEs and faculty FTEs for the proposed baccalaureate programs:

Year	Student Headcount	# of Faculty	Student-Faculty Ratio	Accreditation Req'd Ratio
1	4	1.0	4:1	N/A
2	6	1.0	6:1	N/A
3	9	1.5	6:1	N/A
4	12	1.5	8:1	N/A
5	14	1.5	9.33:1	N/A

SECTION III: Need

Program Need

The Mathematics Education degree is foundational to, and is almost universally offered at, baccalaureate institutions granting secondary licensure. The emphasis at the state and federal levels on increasing math knowledge and abilities among school-age children in the United States highlights the need for highly qualified mathematics teachers; furthermore, secondary schools throughout Washington County, the State of Utah, and elsewhere are constantly seeking mathematics faculty. Students at Dixie State College need this degree option available to them.

Prior to the economic downturn of 2008, much had been made of the teacher shortage in Utah, particularly in mathematics and science. Until then, it had been estimated that Utah's student enrollment was expected to grow from 540,000 to more than 680,000 students by 2014. At the same time, the state's colleges and universities were not producing qualified graduates in numbers to meet the projected demands. The *Deseret News* reported that "about half of those who do become teachers quit within the first five years. Of Utah's some 9,000 new teachers licensed between 2000 and 2004, fewer than half remain in Utah public schools by the 2005-06 school year, the Supply and Demand Study states."[4] It was reported that in 2007 the state of Utah needed as many as 100 new math and science teachers, but was only able to attract six qualified candidates.[5]

Of course, the economic downturn and subsequent recession may have tempered the demand, but more recent data tell of a sustained need nationwide for qualified secondary math and science teachers. In its 2009 report, "The Opportunity Equation: Transforming Mathematics and Science Education for Citizenship and the Global Economy," the Carnegie Institute for Advanced Study said:

> *To achieve dramatic improvements in math and science education for all students, we will need to increase the supply of teachers with strong working knowledge of mathematics and science and the pedagogical techniques necessary to teach math and science effectively. Our secondary schools will continue to need math and science teachers with deep, specialized knowledge of those disciplines, and increasing their numbers must continue to be an important priority. For the future, however, we must also aim to build a teaching profession in which all teachers, in every discipline and from the elementary grades on up, are "STEM-capable," or sufficiently conversant with math and science content and relevance to infuse their classrooms with rigorous, motivating math and science learning. To prepare American students to participate fully in tomorrow's economy and society, our K-14 educational system needs a STEM-capable human capital infrastructure.*[6]

Labor Market Demand

The Mathematics Education degree prepares students to work toward a specific career, that of a mathematics teacher. Demand for mathematics educators is brisk, both regionally and nationally. In fact, the regional demand for secondary teachers is such that the Washington County School District (WCSD) included mathematics as one of four specially requested degrees. Given the proficiency requirements in Utah high schools in mathematics, such needs will continue to be reflected in the years ahead.

Student Demand

Because of ongoing student interest in educational careers at most state colleges and universities, colleges of education tend to have an institution's largest number of annual graduates. Data from a joint survey conducted by Dixie State College and the Washington County School District in the Spring of 2006 indicate a certain population in the County that is interested in pursuing a degree in education. Many in this population already possess a baccalaureate degree and desire secondary licensure. Because of the current market demand for math educators, it is anticipated that many of DSC's current math students will move toward the math education degree. A survey conducted in January 2009 of 230 students enrolled in mathematics courses above the level of MATH 1210 at Dixie State showed substantial interest in pursuing degrees in mathematics or mathematics education: Of 230 students surveyed, 26 indicated an interest in

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[4] http://deseretnews.com/article/1,5143,695202503,00.html

[5] http://www.heraldextra.com/content/view/253710/155/

[6] Carnegie Corporation of New York and Institute for Advanced Study, 2009, http://www.opportunityequation.org/

Math Education; 35 were interested in majoring in Mathematics; and 21 were interested but undecided as to which degree to pursue, mathematics or math education. In addition to current and future DSC students, approximately half of the Washington County School District teachers with mathematics endorsements have Level 2 or Level 3. WCSD indicates that some of those teachers would be eager to gain a Level 4 endorsement.

Similar Programs
All baccalaureate-degree-offering institutions in the Utah System of Higher Education have a Mathematics Education Program.

Collaboration with and Impact on Other USHE Institutions
Collaboration with sister institutions has been primarily confined to informal contacts at major's meetings, most recently at the face-to-face Math Major's meeting in Salt Lake City in September 2010. Mathematics faculty at Dixie State have carefully reviewed the Mathematics programs of USHE institutions and used those program curricula as a model for the DSC program. Dixie State expects that impact on sister institutions will be minimal, if it exists at all, primarily because 70% of Dixie's students are Washington County residents; these are students who traditionally don't go elsewhere for undergraduate education, regardless of availability of degree options.

Benefits to DSC and to the USHE
Access to educational options is a probable contributor to southern Utah's troublingly low rates in baccalaureate completion. While associate degree attainment in Washington County is strong (38% compared to 17.7% for the state), baccalaureate attainment for the 25- to 34-year-olds is almost reversed: 17.4% in Washington County compared to 25.4% for the state.[7] The proposed degree in mathematics education, by offering one more baccalaureate option, should contribute to reversing this trend, since the costs and difficulty for Washington County students to travel to another institution appear be a substantial hindrance to baccalaureate completion. Approving the proposed degree will improve access for the growing population of southwest Utah. Just as important, it will assist in the burden placed on USHE to provide the teachers needed in Utah by graduating skilled and well-prepared secondary teachers for local, regional, and state school districts.

Consistency with Institutional Mission
The proposed degrees in Mathematics Education are in keeping with DSC's mission to offer baccalaureate programs in "core or foundational areas" and to deliver "quality higher educational opportunities within its service area." Furthermore, it is in keeping with the Mission's mandate that Dixie State "will be a cooperative and conscientious partner with other public and higher education institutions."

SECTION IV: Student and Program Assessment

Program Assessment
Each department at DSC goes through a program review prescribed in policy. This review includes assessment of facilities, teaching resources, curricular design, and academic achievement of learning

[7] Available at: http://factfinder.census.gov/servlet/STTable?_bm=y&-state=st&-context=st&-qr_name=ACS_2005_EST_G00_S1501&-ds_name=ACS_2005_EST_G00_&-tree_id=305&-redoLog=true&-_caller=geoselect&-geo_id=05000US49053&-format=&-_lang=en

objectives, with each department reviewed on a five-year rotation. As required by Regents' policy, a three-year follow-up report of the new degree program will be submitted.

At the suggestion of consultant Dr. Virginia Buchanan, DSC Mathematics faculty adopted the recommendations of the Mathematical Association of America (MAA) in revising its program goals and learning outcomes. In addition to taking the PRAXIS II for secondary licensure (described below), all majors will take the ETS graduate exam in their senior year. This nationally-standardized exam will provide program-level assessment as resulting student scores will be analyzed in relation to the program outcomes. Employer satisfaction will be measured in surveys to be developed.

Expected Standards of Performance
Central to this degree proposal is a commitment to student assessment and, ultimately, to the production of quality graduates. Graduates of the Mathematics Education program will receive the training necessary to apply for Level 4 endorsement in mathematics, making them eligible to teach any and all high school mathematics courses offered in the State of Utah.

Mathematics education graduates must complete 48 credits of coursework directly related to knowledge of the field, an additional 36 credits specifically designed to prepare them for careers in secondary schools, and a 5-credit calculus-based physics course to provide applied knowledge of mathematics. In addition, graduates must pass the PRAXIS II examination in Mathematics Content Knowledge (Test #0061). The SET program assessment is aligned with TEAC standards as well as INTASC and UPTS standards.

Each course in the curriculum will have identified learning outcomes that must be achieved upon completion of the course. The ability to formulate mathematical proofs is one learning outcome in all courses numbered above 3000, as this is a necessary skill for graduate work in mathematics. Also, each course numbered above 3000 will be structured so as to provide mathematics education students with the essential content knowledge needed to pass the PRAXIS II exam. Sample PRAXIS II exam problems or their equivalents will be included on each final examination in these courses.

SECTION V: Finance

Budget:

Financial Analysis Mathematics Education					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Students					
Projected FTE Enrollment	1	2	3	5	7
Cost Per FTE	23,250	11,625	12,230	7,840	5,660
Student/Faculty Ratio	4:1	6:1	6:1	8:1	10:1
Projected Headcount	4	6	9	12	14
Projected Tuition					
Gross Tuition	3,500	7,000	11,000	20,000	24,000
Tuition to Program	3,500	5,000	7,500	10,000	12,000
5 Year Budget Projection					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**

Financial Analysis Mathematics Education					
	Year 1	Year 2	Year 3	Year 4	Year 5
Expense					
Salaries & Wages	19,000	19,000	30,000	32,000	34,000
Benefits	4,250	4,250	6,700	7,200	7,600
Total Personnel	23,250	23,250	36,700	39,200	41,600
Current Expense					
Travel	1,000	1,000	1,000	1,000	1,000
Capital					
Library Expense					
Total Expense	$24,250	$24,250	$37,700	$40,200	$ 42,600
Revenue					
Legislative Appropriation	20,750	19,250	30,200	30,200	30,600
Grants					
Reallocation					
Tuition to Program	$3,500	$5,000	$7,500	$10,000	$12,000
Total Revenue	$24,250	$24,250	$37,700	$40,200	$42,600
Difference					
Revenue-Expense	$ 0	$ 0	$ 0	$ 0	$ 0

Funding Sources

The funding for the proposed degrees will come from institutional funds, from state allocations, and from new tuition revenue, which depend on future budgetary conditions. External funding sources will be vigorously pursued as conditions allow.

Reallocation

No current reallocation of program funds is planned.

Impact on Existing Budgets

No other programs will be affected by this program.

Appendix A: Program Curriculum

Core Courses for Mathematics Endorsement

Course Prefix & Number	Title	Credits	Pre-req
MATH 1040	Statistics	3	MATH 1010
MATH 1210	Calculus I	5	MATH 1050/1060 or 1065
MATH 1220	Calculus II	4	MATH 1210
MATH 2210	Multivariable Calculus	3	MATH 1220
MATH 2270	Linear Algebra	3	MATH 1210
MATH 2280	Ordinary Differential Equations	3	MATH 1220
MATH 2200	Discrete Mathematics	3	MATH 1210
MATH 3000	History of Mathematics	3	MATH 1220
MATH 3100	Euclidean/ Non-Euclidean Geometry	3	MATH 2200
MATH 3200	Introduction to Analysis	3	MATH 2210/2200
MATH 3400	Probability and Statistics	3	MATH 1220
MATH 3900	Number Theory	3	MATH 2200
MATH 4000	Foundations of Algebra	3	MATH 2200
MATH 4500	Methods/Teaching Sec. School Math	3	MATH 1210
	Sub-Total	**45**	
Other Required Courses			
PHYS 2210	Physics for Scientists/Engineers I	4	MATH 1210
PHYS 2215	Physics Lab I	1	w/PHYS 2210
CS 1400	Foundations of Programming	3	
	Sub-Total	**8**	
	Total Number of Core Course Credits	**53**	

*Must achieve a C or better in each course

**Three to five math credits may be applied to General Education Requirements

Appendix A, continued

Education Courses		
Course Prefix & Number	**Title**	**Credits**
EDUC 1010	Introduction to Education	3
EDUC 2400	Foundations of Multicultural Education	3
EDUC 2010	Introduction to Exceptional Learners	3
EDUC 3110	Educational Psychology	3
EDUC 2500	Technology for Secondary Teachers	3
SCED 3720	Read/Write in Content Areas	3
SCED 4100	Curriculum, Instruction, Assessment	3
SCED 4600	Classroom Management	3
SCED 4900	Secondary Student Teaching	10
SCED 4989	Student Teaching Seminar	2
	Total Number of Credits	36

Summary of Credit Requirements	
Core Requirements	53
Electives (Course descriptions are included in the complete course list below)	9
General Education (Excluding the credits included in degree requirements)*	26-28
SET Requirements	36
Total Requirements (Upper division credits: 40)	**124-126**

*Three to five mathematics credits required for the degree core may be counted towards GE

New Courses to Be Added in the Next Five Years: The Mathematics Program has no plans for new courses to be added at the program's inception since all the courses needed for the degree are already included in the curriculum; however, as the program grows and new faculty are hired with expertise in other areas, the program will expand its offerings to allow students to explore other areas of mathematics.

MATH 1001 1st Yr Exp - Intro to Math 1.00 CR MATH 1001 is an orientation course created to help students succeed in the math major. It is also designed to help new freshman and returning students to make a successful transition to being a college student. The primary objective of this course is to provide you with the resources you will need to succeed in your college career, particularly in your math courses. 2 lecture hours per week.

MATH 1010 Intermediate Algebra 4.00 - 5.00 CR Designed for students who need preparatory work before entering the minimum courses that fulfill the general education math requirement. Concepts emphasized in this course include the properties of the real number system, sets, functions, graphs, algebraic manipulations, linear and quadratic equations, systems of equations, and story problems. Students will be expected to reason mathematically and solve mathematical problems. This course is a lecture course and will include homework assignments, quizzes, tests, and a comprehensive final exam. Successful completion of the course gives students good preparation for college-level math courses. Satisfies prerequisites for MATH 1030, 1050, 1090, and BIOL 2400. Prerequisite: MATH 0990 (with an earned grade of C or better) or ACT score of 18 or higher within two years of enrollment. 4 or 5 lecture hours per week.

MATH 1030 Quantitative Reasoning *MA 3.00 CR This course is designed for general studies or liberal arts students majoring in humanities or other non-science programs seeking only an associate degree or certificate. The focus of the course is on the development of analytical problem solving skills through the application of various mathematical concepts to real-life problems. Topics of study include: modeling with algebra; geometry; logic; financial

math; right triangle trigonometry (indirect measurement); probability and statistics. Successful completion of this course will satisfy the general education math requirements. Students who wish to enter four year programs are strongly encouraged to check with departments at transfer schools to determine program compatibility. Although this course transfers to all colleges and universities in Utah, it does not commonly meet specific department requirements. Prerequisite: Math 1010 (with an earned grade of C or better) or ACT score of 23 or higher. 3 lecture hours per week.

MATH 1040 Intro to Statistics *MA 3.00 CR Fulfills General Education Mathematics requirement for students majoring in Communication, Social & Behavioral Sciences, Fine Arts, or Liberal Arts. Introduction to basic concepts and methods used in statistical data analysis includes descriptive statistics, sampling, and inferential methods while emphasizing problem solving and critical thinking. Microsoft Excel is used to perform statistical calculations, organize and analyze data, and construct graphs. Required for Utah Level 2 Math Endorsement. Students are cautioned to check degree and/4 transfer requirements before taking this course. Successful completes satisfy Mathematics prerequisites for PSY 3000. Prerequisite: Math 1010 (with an earned grade of C or better) orplacement test score of 23 or higher. 3 lecture hours per week.

MATH 1050 College Algebra/Pre-Calculus *MA 4.00 - 5.00 CR Designed for students majoring in science and engineering who need a calculus and/or physics series. Review of fundamental algebra. Polynomial and rational functions will be explored. Introduction into exponential and logarithmic functions and their applications. Trigonometric functions dealing with graphs, identities and equations including inverse functions. This course is a lecture course with homework assignments, quizzes, tests, and a comprehensive final exam. Successful completion of the course prepares students for MATH 1060. Satisfies prerequisites for MATH 1060, MATH 1100 and MATH 2010. Math 1050 is required for Utah Teacher Certification. Prerequisite: MATH 1010 (with an earned grade of C or better) or ACT score of 23 or higher within two years of enrollment. 4 to 5 lecture hours per week.

MATH 1060 Trigonometry *MA 3.00 CR Continuation of MATH 1050. Further discussion in trigonometry and its applications. Analytic Geometry including conic sections, systems of equations and inequalities and partial fractions. Introduction into discrete algebra including sequences and series and the binomial theorem. This course is a lecture course with homework assignments, quizzes, tests, and a comprehensive final exam. Successful completion of the course provides students with the concepts needed to continue in a Physics or Calculus series. Satisfies prerequisites for MATH 1210 and PHSX 1110. Prerequisite: Math 1050 (with an earned grade of C or better) or equivalent. 3 lecture hours per week.

MATH 1065 Precalculus w/Trigonometry *MA 5.00 CR Designed for students who need an in depth review of precalculus and trigonometry before entering trig-based calculus. This course reviews the mathematical concepts taught in Math 1050 and Math 1060. Students who choose to apply Math 1065 toward graduation cannot also count Math 1050 or Math 1060. Prerequisite: Within the previous two years a placement test score equivalency of 25 or better OR within the past two years Math 1010 with an earned grade of B or better or successful precalculus experience more than two years ago. 5 lecture hours per week.

MATH 1100 Business Calculus *MA 3.00 CR Designed for students majoring in business, life sciences, certain computer science emphases, and certain allied health programs who are required to take a one semester calculus course. Concepts emphasized in this course include functions, modeling, differentiation, applications of differentiation, exponential and logarithmic functions, integration, applications of integration, and functions of several variables. Course includes; lectures, homework assignments, quizzes, tests, and a comprehensive final exam. Successful completion of the course provides students with the required calculus techniques that satisfy all areas requiring just one quarter of calculus. Prerequisite: Math 1050 or Math 1090 (with an earned grade of C or better) or ACT score of 25 or higher. 3 lecture hours per week.

MATH 1210 Calculus I *MA 5.00 CR Designed for students intending to earn an Associate of Science degree and then transfer to a mathematics, engineering program, or other calculus-based major at a four-year institution. Students will gain a basic understanding of calculus, the mathematics of motion and change. Topics include limits

and continuity, differentiation, applications of differentiation, integration, applications of integration, derivatives of exponential functions, logarithmic functions, inverse trigonometric functions, hyperbolic functions and related integrals. Students must have a working knowledge of college algebra and trigonometry, and a graphing calculator is strongly recommended. Course includes lecture and homework assignments, quizzes, tests and a final comprehensive exam. Successful completion of the course prepares students for Calculus II. Satisfies prerequisites for MATH 1220 and PHSX 2210. Prerequisites: MATH 1050 and MATH 1060, or MATH 1065 (with an earned grade of C or better) or ACT score of 26 or higher. (Math 1060 is strongly recommended for all students.) 5 lecture hours per week.

MATH 1220 Calculus II *MA 4.00 CR This course is the continuation of MATH 1210. Topics covered includes arc length, area of a surface of revolution, moments and centers of mass, integration techniques, sequences and series, parameterization of curves and polar coordinates, vectors in 3-space, quadric surfaces, and cylindrical and spherical coordinates. Course includes lecture, homework assignments, quizzes, tests and final comprehensive exam. Successful completion of the course prepares students for MATH 2210. Prerequisite: Math 1210 (with an earned grade of C or better) or equivalent. 4 lecture hours per week.

MATH 1800 Mathematics Work Experience 1.00 - 3.00 CR Cooperative Education relates the classroom to the employment community. Those with a designated major and a vocational or career interest may be assisted in locating employment that relates to classroom studies. If a student has approved employment, they may be eligible for academic credit based upon the completion of structured learning objectives. Cooperative Education is available in all divisions. Permission must be obtained from the director of cooperative education before registration. Students are limited to four cooperative education credit courses or 12 cooperative education credits. Fall section.

MATH 1810 Mathematics Work Experience 1.00 - 3.00 CR Cooperative Education relates the classroom to the employment community. Those with a designated major and a vocational or career interest may be assisted in locating employment that relates to classroom studies. If a student has approved employment, they may be eligible for academic credit based upon the completion of structured learning objectives. Cooperative Education is available in all divisions. Permission must be obtained from the director of cooperative education before registration. Students are limited to four cooperative education credit courses or 12 cooperative education credits. Spring section.

MATH 1820 Mathematics Work Experience 1.00 - 3.00 CR Cooperative Education relates the classroom to the employment community. Those with a designated major and a vocational or career interest may be assisted in locating employment that relates to classroom studies. If a student has approved employment, they may be eligible for academic credit based upon the completion of structured learning objectives. Cooperative Education is available in all divisions. Permission must be obtained from the director of cooperative education before registration. Students are limited to four cooperative education credit courses or 12 cooperative education credits. Summer section.

MATH 2010 Math for Elem Teachers I 3.00 CR The first course in a two-semester sequence in mathematics appropriate to the needs of the elementary/middle school teacher. Topics include: problem solving, sets, numeration systems, whole numbers, algorithms of arithmetic, number theory, rational numbers and decimal numbers. Required for prospective elementary school teachers. Prerequisite: Math 1050 (with an earned grade of C or better) and is required for Level 1 Math Endorsement and Elementary (K-8) Certification. 3 lecture hours per week.

MATH 2020 Math for Elem Teachers II 3.00 CR A continuation of Math 2010. Topics include: real numbers, statistics, probability, geometry, measurement, and algebra. Required for prospective elementary school teachers. Prerequisite: MATH 2010 with an earned grade of C or better. 3 lecture hours and 2 practicum hours per week.

MATH 2200 Discrete Mathematics 3.00 CR Designed primarily for students majoring in computer science. Topics include logic (including Boolean), set theory, functions, prepositional calculus, graph theory, combinatorics and counting methods. Prerequisite: Math 1100 or 1210 (with an earned grade of C or better). (Offered spring semesters.) 3 lecture hours per week.

MATH 2210 Multivariable Calculus *MA 3.00 CR This course is the continuation of MATH 1220. Includes partial derivatives, gradient vectors, Lagrange multipliers, multiple integrals, line integrals, Green's Theorem, surface integrals, the Divergence Theorem, and Stokes' Theorem. MathCAD - Calculus will also be introduced in computer labs. Course includes lecture and homework assignments, quizzes, tests and a comprehensive final. Successful completion of the course prepares students for all areas that require calculus as a prerequisite. Satisfies prerequisites for ENGR 2000. Prerequisite: Math 1220 with an earned grade of C or better. 3 lecture hours per week.

MATH 2270 Linear Algebra 3.00 CR Designed for mathematics and pre-engineering majors. Covers matrix and vector analysis and systems of equations with applications, linear dependence and independence, matrix algebra and invertibility, determinants and their applications, Cramer's Rule, diagonalization, eigenvalues and eigenvectors, linear transformations (kernel and range), inner product and orthogonality. Covers vector spaces and subspaces, including null and column and bases. Introduces basic proof theory. Uses lecture, text assignments, student presentations and discussions. Successful completion enhances students' post-calculus mathematical skills. Prerequisite: Math 1210 with an earned grade of C or better. 3 lecture hours per week.

MATH 2280 Ordinary Differential Equation 3.00 CR Designed for mathematics and pre-engineering majors. Covers methods of solving ordinary differential equations with applications. Separation of variable, homogeneous and non-homogeneous, exact, first and higher order, integrating factors, substitution methods, linear and non-linear, complex characteristic roots, variation of parameters, undetermined coefficients (superposition and annihilator approach) and Euler-Cauchy will be covered. Systems of equations, power series solutions, and the Laplace transform will be introduced. Uses lecture, text assignments, student presentations, and class discussion. Successful completion enhances students' post-calculus mathematical skills with applications. Prerequisites: Math 2210 and Math 2270 with an earned grade of C or better. (Concurrent enrollment allowed.) 3 lecture hours per week.

MATH 2989 TI-89 Calculator Skills 1.00 CR A course designed specifically to aid students in using the TI-89 calculator. A study guide will be provided, with demonstrations projected overhead for students to follow as they learn through hands-on experience. Covered features include basic computation, matrices, graphing, and calculus applications. The TI-92 and TI Voyage 200 calculators are similar to the TI-89 and are also acceptable tools for the course. Prerequisite: Own or have access to TI-89, TI-92 or TI Voyage 200 calculator. One lecture hour per week.

MATH 3000 History of Mathematics 3.00 CR Designed for all interested students. This course is a brief survey of the history of mathematics and its impact on world culture. Emphasis will be on the principal ideas of importance in the development of the subject, mathematical motivations and applications. This course partially fulfills requirements for Mathematics Endorsements Level 4 through the Utah State Office of Education. Offered upon sufficient demand. Prerequisite: MATH 1220 (with an earned grade of C or better). 3 lecture hours per week.

MATH 3100 Euclidean/Non-Euclidean Geometry 3.00 CR For pre-service Mathematics educators, but open to all interested students. Includes axiomatic development of Euclidean and non-Euclidean geometry. Computer-based GeoGebra program is used. Required for Utah Level 3 and 4 Math Endorsements. Prerequisite: MATH 2200 and (with an earned grade of C or higher). 3 lecture hours per week.

MATH 3200 Intro to Analysis 3.00 CR Designed for those interested in advanced mathematics. This course introduces the construction of rigorous proofs of mathematical claims in beginning analysis. This course partially fulfills requirements for Mathematics Endorsements Level 3 and 4 through the Utah State Office of Education. Offered upon sufficient demand. Prerequisite: MATH 2210, MATH 2280 and MATH 2300 (with an earned grade of C or better). 3 lecture hours per week.

MATH 3210 Intro to Analysis II 3.00 CR Continuation of MATH 3200. Advanced Multivariable Calculus. Topics include continuity, differentiation, chain rule, Riemann integration, Fubini's theorem, change of variable formula. Prerequisite: MATH 3200. 3 lecture hours per week.

MATH 3400 Probability and Statistics 3.00 CR For students in majors that require mathematics-based statistics. Study of probability theory and mathematical statistics including applications in which Microsoft Excel and TI-83/84

calculators are used extensively. Required for Utah Level 3 and 4 Math Endorsements. Prerequisite: MATH 1220 (Grade C or higher). SP (odd years)

MATH 3500 Numerical Analysis 3.00 CR Includes numerical solutions of nonlinear equations, interpolation and approximation, numerical integration and differentiation, and solutions of linear systems, numerical solutions of ordinary and partial differential equations, using Maple software to implement various algorithms numerically. Prerequisites: MATH 2270; AND MATH 2280. FA (even years)

MATH 3900 Number Theory 3.00 CR Overview of number theory and its applications, including the integers, factorizations, modular arithmetic, congruencies, Fermat's and Euler's Theorems, diophantine equations, cryptography, and RSA algorithm. The computer-based Pari-GP program is used. This course or MATH 3000 is required for Utah Level 4 Math Endorsement. Prerequisite: MATH 2200. SP (even years)

MATH 4000 Foundations of Algebra 3.00 CR Designed for students in all math-related majors. This course covers an introduction to algebraic systems including groups rings, fields and sets. This course partially fulfills requirements for Mathematics Endorsements Level 3 and 4 through the Utah State Office of Education. Offered upon sufficient demand. Prerequisite: MATH 1220 and MATH 2300 (with an earned grade of C or better). 3 lecture hours per week.

MATH 4010 Abstract Algebra 3.00 CR Continuation of MATH 4000. Topics include Sylow Theory for finite groups, Galois Theory, factorization in commutative rings. Prerequisite: MATH 4000. 3 lecture hours per week.

MATH 4100 Intro to Topology 3.00 CR An overview of elementary point-set topology. Topics include topological spaces, compactness, connectedness, metric spaces, and Hausdorff spaces. Prerequisites: MATH 2210, MATH 2300. 3 lecture hours per week.

MATH 4200 Intro to Complex Analysis 3.00 CR An overview of basic theory and applications of complex variables. Topics include analytic functions, contour integration, and conformal mappings. Prerequisite: MATH 3200. 3 lecture hours per week.

MATH 4500 Methods/Teaching Secondary School Math 3.00 CR Designed for pre-service educators, this course covers methods, remedial instruction, and curriculum development for secondary school mathematics, including applications of calculators and computers in mathematics. Technology used includes graphic calculators, spreadsheets, Internet searching, and computer-based geometry software. Required for Utah Level 2, 3, and 4 Math Endorsements. Prerequisite: MATH 1210 (Grade C or higher). FA (even years)

MATH 4900: Senior Capstone Seminar 3.00 CR Required of all Mathematics majors in the senior year. Emphasizes the ability to analyze and communicate mathematically through projects to include researching topics, summarizing journal articles, using a technical documentation system such as LaTeX or Equation Editor, and making oral class presentations. Preparation for and completion of standardized exit exam is required. Course fee required. Prerequisite: Senior standing; and Mathematics major. SP

Secondary Education Teacher (SET) Course Descriptions

Education Pre-requisite Courses	
EDUC 1001 Freshman Seminar in Education (1)	This course is required for all entering freshmen, and is recommended for transfer students with 0-24 credits. The course is designed to help students adapt to college life and become integrated into Dixie State College. Students will refine academic skills, create and foster social networks, learn about college resources, and explore different fields of study, degree options, and career opportunities. Sections offered by academic departments will include information pertinent to that discipline, while open major sections will include information about choosing a major or area of student. 2 lab hours per week.
EDUC 1010 Foundations/Intro to Education (3)	Required prerequisite course for both the Elementary Education degree and the Secondary Education Teaching (SET) program. Provides an overview of vocational aspects of a teaching career including: certification requirements, foundations of education, current and historical issues in education, an overview of current trends in methodology, and classroom management. This class provides students with an opportunity to assess oneself as a prospective teacher. Various teaching methods are used including lecture, cooperative learning, inquiry methods, direct instruction and mastery learning. Students are required to do two full observation days in local K-12 school settings. 3 lecture hours per week.
EDUC 2010 Intro to Exceptional Learners (3)	Required pre requisite course for both the Elementary Education degree and the Secondary Education Teaching (SET) program. Provides an overview of exceptional students and examines the teacher's role in integrating these students into the K 12 classroom. Identifies characteristics and special needs of students who have physical, emotional, social, mental, or health exceptionalities. In addition, students will learn the basic laws and policies of Special Education and the key characteristics of inclusion and co teaching. 3 lecture hours per week.
EDUC 2400 Foundations/Multicultural/ ESL Education (3)	Required prerequisite course for both the Elementary Education degree and the Secondary Education Teaching (SET) program. Teacher candidates will examine a variety of theoretical frameworks associated with multicultural education and current issues affecting diverse students in the educational setting. The course content and assessments will provide teacher candidates with opportunities to discuss and reflect on issues of race, gender, individual differences, and ethnic as well as Cultural perspectives. Additionally, a foundation of language acquisition theory and sheltered English techniques will also be introduced to address the needs of English Language Learners. This course also partially fulfills the requirement for ESL Endorsement. 3 lecture hours per week
EDUC 2500 Technology/Education/ Electronic Portfolio K-12 (3)	Required pre requisite for both the Elementary Education and the Secondary Education Teaching (SET) programs. Teacher candidates will learn basic computer programs and technology tools that will be used to create productive learning environments in the educational setting. For example, computer programs will address grading software, creating databases, spreadsheets, word processors, e mail, bulletin boards, internet access, educational websites, and Smartboards. In addition to these technology tools, students will develop an electronic portfolio based on INTASC (New Teachers Assessment and Support Consortium) and NET (National Educational Technology Standards for Teachers). This e portfolio will enable pre service teachers to document professional growth in a wide range of knowledge, skills, and dispositions through tangible artifacts and reflections throughout their educational career. 3 lecture hours per week.
EDUC 3110 Educational Psychology (3)	Required prerequisite course for both the Elementary Education degree and the Secondary Education Teaching (SET) licensure program. Provides teacher candidates with an overview of the relationship of psychology to teaching and learning. Students will learn about the nature of learning, human brain growth, the impact of brain research, child and adolescent development and how the brain processes information. An emphasis is places on how teacher candidates can apply the theories and practices of educational psychology into day to day teaching practices. 3 lecture hours

Secondary Education Courses	
SCED 3720 Read/Write in Content Areas (3)	Required for all Secondary Education Teaching (SET) students. Prepares secondary education teacher candidates to facilitate reading, writing and study skills in the content areas at the middle and secondary school level. Recommended to be taken concurrently with SCED 4100, SCED 4600, and SCED 4700 (or major equivalent). Combined lecture / practicum. 2 lecture and 2 practicum hours per week
SCED 4100 Curriculum/Instruction/ Assessment (3)	Required for all Secondary Education Teaching (SET) students. Examines research based curricular, instructional, and assessment issues, and national, state, and district standards. Prepares secondary education teacher candidates to unwrap state content standards and write objectives/ enduring understandings, design formative and summative assessments, and align instruction with objectives and assessments. The primary models for this course will include Understanding by Design (UbD) and Professional Learning Communities (PLC). Combined lecture/practicum. 2 lecture and 2 practicum hours per week.
SCED 4600 Classroom Management (3)	Required for all Secondary Education Teaching (SET) students. Designed for the management and leadership of the middle and high school classrooms. Areas include: discipline, procedures and routines, interpersonal relationships, classroom environment, learner motivation, and parental involvement. Students will design a comprehensive Classroom Management Plan (CMP). Combined lecture/practicum course. 2 lecture and 2 lab hours per week.
SCED 4700 Content Methods Course (3)	Required for all Secondary Education Teaching (SET) students. Education and academic content faculty will work together to ensure content knowledge and effective pedagogy are appropriate for secondary (grades 7 12) learning environments. Lecture, seminar discussion, and practicum experiences in local secondary schools are the modes of instruction for this course. Teacher candidates will develop lesson plans based on national and state standards that include subject matter, instructional methods, assessments, and analysis of student learning from their practicum experience. Can be substituted with an equivalent methods course in a specific content area. Combined lecture / practicum. 2 lecture and 2 lab hours per week.
SCED 4900 Secondary Student Teaching (10)	Required for all Secondary Education Teaching (SET) students. Thirteen (13) weeks of full time student teaching in a secondary school classroom (grades 7 12). Cooperating (mentor) teachers support teacher candidates as they are given responsibility of all aspects of teaching and learning in the classroom. DSC faculty members supervise and evaluate the teacher candidates using the department of education assessment tool. At the successful conclusion of the course, the teacher candidate will have completed the required content coursework and the student teaching requirement, and they will be eligible for the Utah Secondary Teaching License. Must be taken concurrently with SCED 4989, 40 hours per week.
SCED 4989 Student Teaching Seminar (2)	Required for all Secondary Education Teaching (SET) students. Teacher candidates debrief and collaborate about special topics such as classroom management, lesson design, assessment, and instructional strategies. The purpose of this seminar is to solidify the pre service experiences, present the professional portfolio and teacher work sample in its entirety and to dialogue with educational professionals to plan professional development subsequent to graduation. Prerequisite: Admission to the Dixie State College Secondary Education Teaching (SET) program. Corequisite: SCED 4900. 2 lecture hours per week.

Appendix B: I Program Schedule

Hypothetical Program Schedule, Mathematics Education Degree

Semester 1	
MATH 1210, Calculus I	5
MATH 1001, First Year Experience	1
CIS 1200, Computer Literacy	3
GE, American Institutions	3
GE, Fine Arts/Communication	3
Semester Total	15

Semester 2	
MATH 1220, Calculus II	4
ENGL 1010, Introduction to Writing	3
LIB 1010, Information Literacy	1
GE, Life Science	3
PSYC 1010, General Psychology	3
GE, Literature/Humanities	3
Semester Total	17

Semester 3	
MATH 2270, Linear Algebra	3
MATH 2200, Discrete Math	3
PHYS 2210, Physics for Scientists/Engineers I	4
ENGL 2010, Intermediate Writing	3
MATH 3000, History of Math	3
Semester Total	17

Semester 4	
MATH 2280, Ordinary Differential Equations	3
MATH 2210, Multivariable Calculus	3
MATH 1040, Statistics	3
EDUC 1010, Introduction of Education	3
MATH 3900, Number Theory	3
Semester Total	15

Semester 5	
MATH 3000, Foundations of Algebra	3
CS 1400, Foundations of Programming	3
EDUC 2400, Foundations of Multicultural Education	3
EDUC 2010, Introduction to Exceptional Learners	3
EDUC 3110, Educational Psychology	3
Semester Total	15

Semester 6	
MATH 3400, Probability and Statistics	3
MATH 3100, Euclidean/Non-Euclidean Geometry	3
EDUC 2500, Technology for Secondary Teachers	3
Elective	3
Elective	3
Semester Total	15

Semester 7	
MATH 3200, Introduction to Analysis	3
MATH 4500, Methods/Teaching Secondary School Mathematics	3
SCED 3720, Read/Write in Content Areas	3
SCED 4100, Curriculum, Instruction, Assessment	3
SCED 4600, Classroom Management	3
Semester Total	15

Semester 8	
SCED 4900, Secondary Student Teaching	10
SCED 4989, Student Teaching Seminar	2
Semester Total	12

Total Credits: 121

Appendix C: Faculty

Faculty	Position	Degree/Year	Area	Institution
Scott L. Mortensen	Assoc. Prof., Dept. Chair	M.Ed., 1991	Mathematics	Utah State U.
Costel Ionita	Assoc. Prof.	Ph.D., 2004	Mathematics	Louisiana State U.
Clare Banks	Assoc. Prof.	Ph.D., 2005	Mathematics Education/Statistics	U. of Northern Colorado
Jie Liu	Assoc. Prof.	Ph.D., 2006	Mathematics	U. of Texas, Arlington
Taylor A. Jensen	Instructor, Tenure-track	Ph.D., 2009	Mathematics Education	Montana State U.
Lynn R. Hunt	Assoc. Prof.	MS, 1984	Mathematics, Computer Ed	Oregon State U.
Ross Decker	Assoc. Prof.	MS, 1994	Mathematics Education	Brigham Young U., Provo
Barbara Blythin	Asst. Prof.	MS, 1989	Mathematics	U. of Nevada, LV
Gordon A. Russell	Asst. Prof.	MS, 1963	Mathematics Education	Utah State Univ.
Kathryn Ott	Lecturer/ Advisor (0.50)	MS, 1981	School Psychology	Brigham Young U., Provo

Adjunct Mathematics Faculty:

Adjunct Faculty	Degree	Area	Institution
Violeta A Ionita	M.S.	Mathematics	Louisiana State Univ. 2002
Kathryn Ott (Lecturer-Advisor)	M.S.	Psychology	Brigham Young Univ. 1981
Paul Brooks	M.A.	Mathematics; School Administration	San Diego State 1970; BYU 1977
Odean Bowler	J.D.	B.S. Electrical Engineering	BYU, 1995; U of U 1988
Robert Comeford	M.Ed.	Secondary Ed; B.S. Mathematics (level 4)	Utah State 1980; SUU, 1973
Michelle Poast	M.S.	Mathematics	Fayetteville State U. 1999
Robert T. Reimer	M.Ed.	Secondary Ed.; B.A. Mathematics	SUU, 1997; BYU, 1993
Ryan Cascade McConnell	M.S.	Education; B.S. Secondary Education	Walden U. 2004; UNLV 2000
Craig Seegmiller	MBA	B.A. Math Education	Thunderbird 1990; BYU 1986
Christine Cunningham	M.S.	Education	SUU 2005
Max Rose, Professor Emeritus	Ph.D.	Chemistry; B.S. Mathematics	BYU, 1976

Education Faculty:

Faculty	Degree	Area of Specialization	Institution awarding degree and date
Tracy Wheeler	Ed.D	Classroom Management & Motivation; Educational Technology; Multicultural; Curriculum Design & Assessment	Utah State U, 2006
John Goldhardt	Ed.D	Educ.Psychology; Classroom Mgmt. Secondary; Multicultural Ed; Curriculum, Instruction & Assessment; WCSD Liaison	U. of Nevada L V, 2004

Brenda Sabey	Ph.D	Curriculum & Instruction; Literacy Studies	U. of Nevada, Reno, 1997
Chizu Matsubara-Jaret	Ph.D.	Curriculum & Instruction/TESOL	U. of Nevada, LV 2007
Sandy Peterson	Ph.D.	Curriculum & Instruction, Cultural Foundations of Education, Math Endorsement in progress	U. of Utah, 1999
Nancy Hauck	MA	Curriculum & Instruction	Utah State U. (Ed.D in progress)
Harry Odil	MA	Foundation Courses; SET Advisor	U. of Northern Colorado

APPENDIX D: Library and Information Resources

The Browning Library continues to expand appropriate collections for current baccalaureate offerings. It is committed to supporting the baccalaureate programs by ordering any material requested by a department.

The library currently has sufficient titles in mathematics itself, with additional titles in secondary mathematics and an abundance of titles in secondary education. Many of the resources in the library are electronic offerings. Journals in mathematics and math education are on the library shelves, and videos and CDs are also available.

Among other resources, the library has the following databases relevant to the Mathematics Education degree:

Global Search: a meta-search engine that searches multiple databases for various topics. It includes catalogs, databases and online resources. This search engine will be replaced soon by a similar search engine to be selected by the Utah Academic Library Consortium.

Academic Search Premier (EBSCO Host): a scholarly, multi-disciplinary database with full text coverage of 4600 journals in a range of subjects. This database is a good starting point for almost any topic search.

American Mathematical Society (AMS) Journals: a searchable database that provides full text access to articles published in the journals of the AMS.

Annual Reviews: full text of various annual (subject/discipline) reviews online.

JSTOR: a scholarship journal archive that provides image and full text access to archival (more than five yeas old) scholarly journals in various subject areas.

MathSciNet: access to over 50 years of mathematical reviews and data. The database is a finding source for citations for scholars in this discipline.

Project Muse: full text of over 40 scholarly journals from the Johns Hopkins University Press.

Web of Science: consolidated searching of citation search engines and multi-disciplinary listings of articles in 8500 major scholarly journals.

Other useful resources include the library catalog, electronic books, Utah's catalog, full-text periodicals list, and interlibrary loan.

Physical materials in the Browning Library include a mathematics education physical periodicals list (at least one year's worth of issues), the **Journal for Research in Mathematics Education**, **Mathematics Teacher**, and the **National Council of Teachers of Mathematics News Bulletin**.

There are 41 math education video recordings and 28 CD-ROMS. Other physical materials include a total 482 titles on the study and teaching of mathematics, but only 38 of them has secondary education as a subject heading. This is one area that will need to be addressed and amplified in the near future.

APPENDIX E: Program Learning Goals and Outcomes

Mathematics Program Goals and Learning Outcomes:

Program Goal #1: Develop mathematical thinking and communication skills

Learning Outcomes:

1. Students will practice and demonstrate mathematical principles, gradually developing more sophisticated abilities in mathematical reasoning and problem solving.
2. Students will learn to apply precise, logical reasoning to problem solving.
3. Students will develop persistence and skill in exploration, conjecture, and generalization.
4. Students will read and communicate mathematics with understanding and clarity.

Program Goal #2: Communicate the breadth and interconnections of the mathematical sciences

Teach students, in a clear and understandable manner, the scientific process and fundamental scientific concepts upon which further, life-long scientific understanding can be built.

Learning Outcomes:

1. Students will present key ideas and concepts from a variety of perspectives.
2. Students will employ a broad range of examples and applications to illustrate and motivate the material.
3. Students will make connections to other subjects and apply the course material to these subjects.
4. Students will introduce contemporary topics from the mathematical sciences and their applications.

Program Goal #3: Use technology to support problem solving and to promote understanding at every level of the curriculum

Learning Outcomes:

1. Students will use technology appropriately and effectively as a tool for solving problems.
2. Students will use technology as an aid to understanding mathematical ideas.

Program Goal #4: Provide a broad view of the mathematical sciences

Learning Outcomes:

1. Students will understand that mathematics is an engaging field, rich in beauty, with powerful applications to other subjects, and contemporary open questions.
2. Students will have significant experience with a number of contrasting but complementary points of view, including:
    - Continuous and discrete,
    - Algebraic and geometric
    - Deterministic and stochastic
    - Theoretical and applied

3. Students will study a single area in depth, drawing on ideas and tools from previous coursework and making connections, by completing two related courses or a year-long sequence at the upper level.
4. Students will work on a senior-level project that requires them to analyze and create mathematical arguments which culminates in a written paper and an oral presentation.

Program Goal #5: Encourage and nurture mathematical science majors
Learning Outcomes:

1. Students will receive effective teaching in introductory courses.
2. Students will be carefully advised and will learn about careers in the mathematical sciences.
3. Students will be assigned a faculty mentor and will be actively advised.
4. Students will experience a welcoming atmosphere and opportunities to establish working relationships with peers, tutors, and instructors.

DSC Secondary Education Teacher Program Goals and Learning Outcomes:
Students who are admitted into the SET program must successfully meet the general education course requirements and complete five pre-education core requirements with a minimum of a 3.0 GPA. These requirements include introduction courses in the field of education, multicultural education, exceptional learners, education technology, and educational psychology.

The first semester curriculum for SET students includes professional secondary courses in reading/writing in the content areas, curriculum design, instruction, and assessment, classroom management, and a general content methods course for post-baccalaureate students or a content methods course in the academic major department for the undergraduate degree in the candidates' major content area. Most of these courses are a combination of lecture/practicum or lecture/lab. The second semester includes the field experience of student teaching and a student teaching seminar. The total program licensure requirement is 36 credits.

The program requires candidates to successfully complete all courses, field experiences, and to take and pass the Praxis II text in their major content area as identified by the Utah State Office of Education.

SET Program Advisement and Monitoring:
Program advisors monitor students' GPAs every semester and report this information to the department chair and the SET director. If a student's GPA falls below 3.0, a meeting is required and a plan developed to meet GPA requirements. The student is placed on academic probation with a letter included in his or her file. If the required GPA is still not achieved, the student may be dropped from the program. Students are aware of the college appeal process, which would consist of a formal letter to the associate dean, requesting a meeting to discuss possible options.

SET Program D.E.S.E.R.T. Model Claims and Alignment with TEAC, INTASC, and UPTS Standards:

Program Claim	TEAC QP 1	INTASC	UPTS
Diversity (DM1)	Multicultural Perspectives and Accuracy (QP 1.4.2)	2,3	1,2,3,5
Effective Pedagogy (DM2)	Pedagogical Knowledge (QP1.2)	4,7,8	1-4
Subject Matter (DM3)	Subject Matter Knowledge (QP1.1)	1,7	1,2
Environment (DM4)	Caring and Effective Teaching Skill (QP1.3)	2,5,6	1,2
Reflective (DM5)	Learning How to Learn (QP1.4.1)	9.10	3.5
Teaching Disposition (DM6)	Caring and Effective Teaching Skill (QP1.3)	3,10	5

Description of Program D.E.S.E.R.T. Claims

Claim 1: Diversity – Teacher candidates understand that diversity differences (i.e. race, gender, ethnicity, culture, exceptionalities, individual differences, etc.) affect learning and they know how to provide educational opportunities that meet the needs of all students. According to TEAC's cross-cutting theme of Multicultural Perspectives, "Candidates must demonstrate that they have learned accurate and sound information on matters of race, gender, individual differences, and ethnic and cultural perspectives." This theme aligns directly with the program's Diversity claim and is also integrated through all program claims.

Claim 2: Effective Pedagogy – Teacher candidates can create effective and meaningful instruction and assessment for all students based on required subject matter knowledge, state content standards, curriculum goals, and use of technology. This claim requires teacher candidates to convert multiple sources of knowledge and resources (e.g. subject matter, state content standards, assessments, technology, etc. into effective and meaningful lessons. The cross-cutting theme of technology is also embedded in all of the D.E.S.E.R.T. model principles, but for specific measurements has been placed under this claim.

Claim 3: Subject Matter – Teacher candidates have a strong knowledge of the subject matter they will teach and can facilitate the acquisition of that knowledge in their students. This claim aligns directly with the TEAC quality principle of Subject Matter Knowledge

Claim 4: Environment – Teacher candidates can create physically and emotionally safe classroom environments that encourage active learning, self-motivation, and cooperative interaction among students. This claim aligns with the TEAC quality principle of Caring and Effective Teaching and requires candidates to teach caringly, effectively, and in a professional manner. A safe classroom environment shows students a teacher cares about their physical and emotional needs. It also embraces structure and policies that demonstrate a professional expectation for learning.

Claim 5: Reflective – Teacher candidates will be active learners and reflective practitioners, individually and with their colleagues. This claim aligns with TEAC's cross-cutting theme of Learning How to Learn. A reflective practitioner is one who becomes an active learner, develops the knowledge and skills needed to transfer what he or she has learned to new situations, and has a desire and disposition of life-long learning. This theme has been indentified under this claim, but these principles are embedded throughout the program.

Claim 6: Teaching Disposition – Teacher candidates will foster a caring and professional relationship with students that focuses on acceptance and their educational needs. This claim embraced TEAC's quality principle of Caring and Effective Teaching Skill. Teacher candidates need to develop professional relationships with their students that show students they are accepted. The teacher cares about them and will use effective teaching skills to ensure they reach their highest potential.

Program Assessment and Rationale:
The faculty and staff assess whether candidates have met the D.E.S.E.R.T. model claims through a variety of sources which include:

- Grades from coursework
- Standardized tests (PRAXIS II)
- Field experiences (practicum and student teaching)
- Final program assessments (teacher work sample and electronic portfolio)

A summary of the program's claims, assessments, and rationale is in the following table:

Program Claim	Evidence	Rationale
Diversity	EDUC 2400; Multicultural Education/ESL Course Grade	Course grade demonstrates content knowledge of multicultural perspectives/accuracy
	DESERT Model (DM) 1 Field Score	Student teaching final evaluation (1-5 scale) measures understanding and practice of multicultural perspectives
Effective Pedagogy	Overall GPA of Methods Courses	Methods courses focus on pedagogical knowledge and practice through practica field experiences
	EDUC 4500/2500 Technology Course Grade	Course grades demonstrate technology knowledge and skills based on curriculum and instructors' multiple assessment measures
	E-portfolio Total Scores	Scores demonstrate knowledge and skills in technology and effective pedagogy from artifacts and rationales
	DM2 Field Experience Final Score (Average of 4 items)	Student teaching final evaluation (1-5 scale) measures effective pedagogy in the curriculum taught by candidates
	Teacher Work Sample (TWS) Analysis Score	TWS analysis score measures effective pedagogy from a curriculum unit taught to students by candidates
Subject Matter	Major GPA	Course content is aligned with subject matter knowledge, instructors are knowledgeable about relevant subject matter and grades incorporate multiple measure of subject matter knowledge over the course of the candidate's program.
	PRAXIS II Test Score	PRAXIS II tests have been validated by experts for the purpose of measuring subject matter knowledge of specific content areas
	DM3 Field Score	Student teaching final evaluation (1-5 scale) measures subject matter knowledge in the curriculum taught by candidates.
Environment	DM4 Field Score	Student teaching final evaluation (1-5 scale) measures class environment, management, and cooperation among students
	Teacher Work Sample (TWS) Design/Instruct Score	TWS design/instruct section measures class environment created from detailed lessons that demonstrate active learning strategies that motivate student learning from a curriculum unit taught by candidates
Reflective	DM5 Field Score (Average of 2 items)	Student teaching final evaluation (1-5 scale) measures reflective attitude and desire of learning how to learn
	Teacher Work Sample (TWS) Reflection Score	TWS reflection score measures candidates self-evaluation, reflection, and ways to improve practices from teaching a curriculum unit
Teaching Disposition	DM6 Field Score (Average of 3 items)	Student teaching final evaluation (1-5 scale) measures candidates' teaching dispositions of caring/professional relationships with students as demonstrated by their effective teaching skills that address student needs
	Teacher Work Sample (TWS) Total Score	TWS total score measures teaching disposition components of caring and effective teaching skills that are included in all areas of the TWS assessment

Appendix E, continued:

INTASC Standards: The Interstate New Teacher Assessment and Support Consortium (INTASC standards reflect the professional consensus of what beginning teachers should know and be able to do. The standards and the key indicators associated with them follow. They provide the framework for the rubrics used to assess the products.

Principle #1: The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students.

Principle #2: The teacher understands how children learn and develop, and can provide learning opportunities that support their intellectual, social, and personal development.

Principle #3: The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.

Principle #4: The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.

Principle #5: The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

Principle #6: The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.

Principle #7: The teacher plans instruction based upon knowledge of subject matter, students, the community, and curriculum goals.

Principle #8: The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner.

Principle #9: The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.

Principle #10: The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.

APPENDIX F: Letter from Washington County School District

(See following page)

WASHINGTON COUNTY
SCHOOL DISTRICT

Washington County School District
121 West Tabernacle
St. George, Utah 84770
Phone (435) 673-3553
Fax (435) 673-3216

SUPERINTENDENT MAX H. ROSE, Ph.D.

August 10, 2010

TO WHOM IT MAY CONCERN;

The Washington County School District urges your support of the BS/BA degrees being sought in Math Education and Physical Science Composite at Dixie State College. We are still a rapidly growing school district with over 26,000 students and 43 schools. We employ 1700 teachers and are seeing a growth prediction of 3% in the coming years. In our 19 secondary schools we need about 100 math teachers and more than that number certified to teach physical sciences. We have several private schools in the county, not associated with our district, which would also have need of these degrees. Interestingly, we have 23 elementary schools that have faculty members who would choose to have a full math education degree, which would add to the total.

We have found that Dixie State is an ideal partner to serve the needs of our students. They adapt well to our model of internships, and they work very well in offering curricula to meet the needs of our current teachers, and in the integrating of preparatory courses with our classroom strengths. It is not easy to correlate our needs with far away institutions.

It is worth noting that we have a former principal of our district working as an education professor and coordinator at Dixie College. We have a shared cost arrangement that makes for a positive model. We are confident that he will expand his correlating effort to the academic departments in such a manner that will result in an ideal teacher for our growing needs.

Please consider our support and endorsement as additional reasons to approve these programs for our student needs.

Sincerely,

Max H. Rose
Superintendent

APPENDIX G: Responses to recommendations from Diana Suddreth, Math Specialist, Utah State Office of Education:

- A major component that I see lacking the proposal is any kind of clinical experience for mathematics education students prior to student teaching. There should be at least one class devoted to a practicum or mathematics lab where students are in classrooms, observing, practicing lessons, evaluating, etc. Nearly all quality programs now contain this. Prospective teachers need to be in classrooms early and often.

DSC Response: **DSC agrees with Ms. Suddreth that students in the Math Ed program should be in classrooms early and often; in fact, majors will be. As a result of this input, the course descriptions for the SCED courses have been included with the proposal; they describe practica experiences in: SCED 3720, "Read/Write in Content Areas"; SCED 4600, "Classroom Management"; SCED 4100, "Curriculum/Instruction/Assessment"; and MATH 4500, "Methods of Teaching Secondary School Mathematics." Also, DSC proposes to modify two courses in the core requirements to include practica: MATH 3100, Euclidean and Non-Euclidean Geometry and MATH 4500, Methods/Teaching Secondary School Math. Ms. Suddreth's observation that an entire class should ideally be devoted to a practicum or lab experience is noteworthy and the math department will take it under advisement.**

- A piece that would be forward thinking would be something that would transition your graduates to classrooms, some kind of ongoing mentoring or support that would ensure success during that critical first year. You've made the case that Washington County will be your primary client, which means the teachers will be placed locally. That gives you a great opportunity to be creative in ensuring their success. This could also add something unique that SUU does not offer, thus strengthening your case that you offer something that is not currently available nearby.

DSC Response: **DSC agrees, and refers to a state program to assist teacher after graduation. According to the USOE website, "The Entry Years Enhancement (EYE) is a structured support program for Level 1 educators as they fulfill the requirements for a Level 2 professional license. EYE provides novice teachers with school, district, and state support for a three-year period. All new educators are required to participate and all requirements must be completed within the first three years of service. The goal of the EYE program is to encourage Level 1 educators to develop successful teaching skills and strategies as described in the Utah Professional Teacher Standards (UPTS) with assistance from experienced colleagues." While mentoring is currently taking place on an informal basis, the department has begun to plan for a more formal ongoing mentoring that could include development of a summer semester workshop, tentatively entitled "PRAXIS Prep," in which recent graduates and teachers in local high schools will get coaching and assistance in preparing for the PRAXIS II examination. A formal system of post-graduate mentoring will be explored that will serve the purpose of providing ongoing mentoring to new teachers, while allowing the Mathematics Education program an opportunity to track and survey graduates through personal and electronic contacts for assessment purposes.**

- Your program of study leaves little room for student exploration in mathematics, which I think is unfortunate. There are no classes offered beyond the basic mathematics classes for students to deepen their understanding of mathematics past what is required as part of the endorsement process. Where are the required mathematics electives?

DSC Response: **DSC acknowledges that this initial degree proposal does not many offer frills; it was intended to be a basic, straightforward curriculum to produce well-trained, capable secondary education mathematics teachers. As the student demand grows and the program matures and acquires additional faculty, the department will expand offerings as appropriate. A further response to this concern is addressed in the responses to Dr. Buchanan, below.**

- I would rethink requiring a full 10 credits of Physics. This is one narrow application of mathematics and requiring 10 credits there prevents students from exploring other, very applicable areas of mathematics such as mathematical modeling, computer applications of mathematics, or additional statistics that have broader application, and are quite frankly, more appealing to 21st Century students. This seems like an archaic requirement to me, perhaps more appropriate as an elective choice.

DSC Response: **Actually, the curriculum includes 5 credits of physics, including a lab; a typographic error in the draft Ms. Suddreth reviewed may have misled her. The department is committed to offering the physics course as a requirement since the program graduates will be teaching mathematics at the secondary level, and they should be prepared to teach any needed classes, including calculus; furthermore, and since most of the significant and pedagogically useful applications of calculus are physics-based, the class is important to prospective teachers. Ms. Suddreth's point that other applicable areas of mathematics may be more appealing to 21st century students is well taken, and the department will consider making available some additional courses as electives in the future. It is hard, however to think of physics as an archaic requirement.**

- I don't see any mathematics specific technology courses. The amount of technology in Methods is usually minimal. At the very least, technology should be mentioned in other mathematics courses.

DSC Response: **In addition to the Core Courses, and the required EDUC 2500, Technology for Secondary Teachers, the program requires CS 1400, Foundations of Programming. This course covers structured programming techniques and the syntax of a high level programming language. Other courses with strong technology inclusions are MATH 1040; MATH 2270; MATH 3100; and MATH 3400. As a result of this comment and similar concerns expressed by Dr. Buchanan, below, the program authors have revised course descriptions to clearly list technology used in each course.**

- In establishing the need, I think it would be wise to use more local data. The 2007 data from the K-16 alliance is out of date, especially considering the downturn in the economy. More recent local data would be a stronger indicator of need.

DSC Response: **The 2007 data has been replaced with more current data and an updated letter of need from the local school district is attached.**

- Your Mathematics Endorsement chart reflects the requirements for a Level 3 license, not a Level 4. Students graduating with Mathematics Education Degrees should minimally meet the requirements for a Level 4 endorsement.

DSC Response: **This observation pointed out to the proposal authors that their description of the curriculum and core courses was confusing to readers; in fact, the required courses for a Level 4 endorsement were included, but were not logically placed in the appendix. That problem has been corrected and the curriculum now indicates required courses for Level 4 endorsement.**

Appendix G, continued: Consultant's Report, Dr. Virginia Buchanan

To: Department of Mathematics
Dixie State College of Utah

From: Virginia M. Buchanan
Professor and Chair, Department of Mathematics
Hiram College

Date: August 20, 2010

RE: Dixie State College Mathematics Education Bachelor's Degree Proposal

This memorandum contains my review of the Dixie State College proposal for a baccalaureate mathematics education degree. Please note that the draft that I received does not include Appendix E, so I do not know what learning outcomes the Mathematics Department has identified for each course in the program. Nevertheless, the proposed mathematics education program overall appears to be a good one. Students who complete the program will have experienced the breadth of mathematics and will have studied the foundational areas of mathematics. Graduates of the program will be prepared for careers in secondary education and for further study. I have a few suggestions for strengthening the proposal. I hope that my comments will be useful to you.

Approximately every ten years, the Mathematical Association of America (MAA) publishes a set of guidelines for programs and departments in the mathematical sciences. A mathematics education bachelor's degree program should be consistent with the current guidelines, as stated in the recommendations of the MAA's Committee on the Undergraduate Program in Mathematics (CUPM). The complete set of recommendations is described in detail in the report *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, published by the MAA in 2004.[8] The teacher preparation recommendations of the *CUPM Curriculum Guide* were informed by *The Mathematical Education of Teachers (MET)*[9], a CBMS report that gives detailed guidelines concerning the education of future teachers of mathematics. For the most part, the proposed Dixie State College mathematics education program follows the recommendations found in the *CUPM Curriculum Guide* and *MET*. However, there are a few recommendations for which the connections are absent or could be made more explicit.

The following recommendations for mathematics education programs are found in Part II, Sections C and D, of the *CUPM Curriculum Guide*.

- *CUPM Recommendation: Courses designed for mathematical sciences majors should ensure that students become skilled at conveying their mathematical knowledge in a variety of settings, both orally and in writing.*[10]

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[8] Available at http://www.maa.org/cupm/

[9] *The Mathematical Education of Teachers*, volume 11 of the Issues in Mathematics Education series of the Conference Board of the Mathematical Sciences, AMS and MAA, 2001, available at http://www.cbmsweb.org

[10] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 44

In the current proposal, it is not clear where students will develop the communication skills described in this CUPM recommendation. The course descriptions of two required courses, MATH 2270 (Linear Algebra) and MATH 2280 (Ordinary Differential Equations), mention student presentations and class discussion. Is oral communication of mathematics emphasized in other courses? Where is skill in the written communication of mathematics developed? Perhaps the information will be included in Appendix E.

- *CUPM Recommendation: All majors should have experiences with a variety of technological tools, such as computer algebra systems, visualization software, statistical packages, and computer programming languages.*[11]

  CUPM Recommendation: Mathematical sciences majors preparing to teach secondary mathematics should experience many forms of mathematical modeling and a variety of technological tools, including graphing calculators and geometry software.[12]

  The proposal would be strengthened by a description of the use of technology throughout the entire mathematics education program. The proposal mentions the use of MathCAD in the MATH 2210 (Multivariable Calculus) course and the requirement of a computer programming course. What technology is used in other courses? Are graphing calculators used in any courses other than the MATH 4500 Methods course? Is geometry software like GeoGebra or The Geometer's Sketchpad used in MATH 3100? What statistics software is used in MATH 1040?

- *CUPM Recommendation: All majors should be required to study a single area in depth, drawing on ideas and tools from previous coursework and making connections, by completing two related courses or a year-long sequence at the upper level.*[13]

  This recommendation for study in depth is not reflected in the proposal. I recommend that students be required to include either MATH 3210 (Analysis II) or MATH 4010 (Abstract Algebra) in their programs.

- *CUPM Recommendation: All majors should be required to work on a senior-level project that requires them to analyze and create mathematical arguments and leads to a written and an oral report.*[14]

  This recommendation is not addressed in the DSC mathematics education proposal. A senior-level project provides students with an opportunity to explore an area in depth, to synthesize material from several courses, and to develop mathematics communication skills. I believe that a required capstone project would strengthen the program.

- *CUPM Recommendation: Mathematical sciences majors preparing to teach secondary mathematics should learn to make appropriate connections between the advanced mathematics*

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[11] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 45
[12] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 52
[13] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 48
[14] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 48

they are learning and the secondary mathematics they will be teaching. They should be helped to reach this understanding in courses throughout the curriculum and through a senior-level experience that makes these connections explicit.[15]

This recommendation is related to the immediately preceding one. An intensive senior-level project could be used to help future teachers to explore the relationships between advanced mathematics and the mathematics they will teach.

DSC's Response: **Dr. Buchanan's suggestions are wise. The current proposal has been enhanced accordingly, with reference to and incorporation of the CUPM standards, and with revisions to the existing course descriptions to explicitly describe the technological tools with which students work and learn; the curriculum shows the addition of a senior capstone project requirement as well. The issue of study-in-depth components of the curriculum is addressed by the intentional array of mathematics electives which requires that any student, by necessity and regardless of mathematics electives choice, is exposed to at least one additional in-depth course sequence .**

In addition to my comments above regarding the CUPM and *MET* recommendations, I have a few observations and questions about the proposal:

- The mathematics education program requires students to complete a 5-credit calculus-based physics course. This requirement is appropriate but strikes me as being a bit old-fashioned. The study of calculus-based physics certainly is the traditional way of introducing students to significant applications of mathematics in a related field. However, modern economics, computer science, statistics, and biology also make significant use of mathematics. A more flexible requirement that can be tailored to individual interests may more attractive to students than the traditional physics requirement.

  DSC's Response: **The College agrees that more flexibility is desirable; the physics series will remain as a required series, but majors will be advised of the availability of appropriate series in computer science, for example. As other series courses in fields such as economics and quantitative chemistry become available, the mathematics department will evaluate their appropriateness as options for majors in this program. This response also addresses some of Ms. Suddreth's concerns as well, that students would benefit from exposure to mathematics applications in other fields.**

- One striking aspect of the proposal is that it includes no mathematics electives. Is there a way to create room in the program for students to pursue their individual mathematical interests? I realize that the program already is crowded and that I have recommended an additional course to increase depth. However, if at all possible, students should have the opportunity to select some topics to match their interests. One way this can be done is through a senior-level project, as described earlier. But there are other ways to introduce flexibility in the program. For example, is it necessary for students to take a number theory course, or could the essential topics from number theory be incorporated into the discrete mathematics and abstract algebra

[15] *Undergraduate Programs and Courses in the Mathematical Sciences: CUPM Curriculum Guide 2004*, page 52

courses? Since some topics from differential equations usually are covered in the calculus sequence, is it necessary for all students to take the differential equations course? These are examples of choices that other institutions have made in order to create room for electives.

DSC's Response: **The program faculty restructured the proposed curriculum in response to Dr. Buchanan's concerns and the changes are reflected in this proposal.**

- Appendix D lists journals published by the National Council of Teachers of Mathematics (NCTM) that are available to students through Browning Library. The three MAA journals--*The American Mathematical Monthly*, *Mathematics Magazine*, and *The College Mathematics Journal*—also are important resources for undergraduate mathematics education majors. The list of Library Resources includes JSTOR, which contains all but the most recent few years' issues of the MAA journals. Do students have ready access to the recent issues, those not available through JSTOR?

DSC' Response: **Students do have access to MathSciNet and to the American Mathematical Society Journals, but not full-text access to recent issues of the Journals listed. Coverage in JStor for the American Mathematical Monthly is from 1894 to 2006., Mathematics Magazine is covered from 1947 to 2006, and The College Mathematics Journal is from 1984 to 1986. (JStor is an archival database—everything is generally 5 years old or older.) Through the Indexing in MathSciNet, students could locate and request specific journal articles and turnaround for requested articles through ILLiad is 2 to 3 days in general, though students are told to allow a week for delivery.**

Signature Page

Institution Submitting Proposal: Dixie State College of Utah

School in Which Program Will Be Located: School of Science and Technology

Department in Which Program Will Be Located: Mathematics

Program Title: Mathematics Education

Recommended Classification of Instructional Programs (CIP) Code: 13.1311

Certificate, and/or Degree(s) to Be Awarded: Bachelor of Science and Bachelor of Arts

Proposed Beginning Date: Spring Semester 2011

Institutional Signatures:

_____
Scott Mortenson, Department Chair

_____
Dr. Victor Hasfurther, Dean of the School of Science and Technology

_____
Dr. Donna Dillingham-Evans, Chief Academic Officer

_____
Dr. Stephen Nadauld, President

Date:_____

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January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Programs and Planning Committee—New Emphases Requiring Regents Approval

The following have been submitted for consideration by the Programs and Planning Committee.

A. *University of Utah – New Emphases:*

i. *Request: New Emphasis in Energy Engineering*
The Department of Chemical Engineering requests an Emphasis in Energy Engineering within the Chemical Engineering Degree. The proposed emphasis will require 15 units, which fits within the current requirement of 17 hours of technical electives in Chemical Engineering. The Chemical Engineering Program requires 130 hours.

ii. Need
Three of the major challenges facing humanity are limitations in the supplies of food, water, and energy. The proposed emphasis in Energy Engineering is meant to give undergraduates in Chemical Engineering a suite of technical electives that will equip them with the engineering and professional skills required to address the need for clean and secure energy.

Energy is fundamental to all aspects of our lives. Humans transform energy from one form to another in order to heat and cool buildings, cook food, heat water, go from one place to another, clean clothes, raise food, purify water, and run the labor-saving devices that make lives so comfortable. Humans currently rely heavily on fossil fuels to meet energy needs. Concerns over the limited supplies of these fuels and in environmental impact make energy engineering a critically important discipline.

The increasing awareness of the importance of energy in society is leading to the development of departments, programs, institutes, journals, and professional organizations devoted to energy. The Department of Energy Resources Engineering and the Global Climate and Energy Project at Stanford University http://pangea.stanford.edu/ERE/index.php and http://gcep.stanford.edu/ is one such example. Penn State has a new undergraduate program entitled Energy Engineering. The University of Utah is home to the Institute for Clean and Secure Energy (http://www.icse.utah.edu/) as well as the Energy and Geoscience Institute

(http://www.egi.utah.edu/).

Table 1 lists the core electives for the proposed emphasis. Students will complete nine units from these six courses. The core courses include Petroleum and Natural Gas Engineering (5155, 5157, and 5159), Combustion Engineering (5153), Air Pollution Control Engineering (5305) and Green Engineering (5307). The latter includes energy conservation via process synthesis, pollution prevention, and the fate of contaminants in the environment. One additional core elective is planned, Production Engineering III, that will cover production management and transportation.

Table 1 Core Chemical Engineering Courses in Energy (9 units required)

Course	Title	Units
CH EN 5153	Fundamentals of Combustion	3
CH EN 5155	Reservoir Engineering	3
CH EN 5157	Production Engineering I	1.5
CH EN 5159	Production Engineering II	1.5
CH EN 5305	Air Pollution Control Engineering	3
CH EN 5307	Green Engineering	3

iii. Institutional Impact

There will be no impact to the department or institution.

iv. Finances

Because all necessary faculty and impact on the curriculum is minimal, there will be no additional costs or other financial impact as a result of implementing this emphasis.

B. *Utah Valley University—New Emphasis*

i. Request: New Emphasis in Writing Studies

The English and Literature Department at Utah Valley University requests authorization to add a new emphasis in Writing Studies to the BA and BS in English degrees, effective Fall, 2011. By adding four new courses to the curriculum, the department will be able to organize the existing writing, rhetoric, and technical communication courses into a new emphasis that will enable students to earn the knowledge, skills, and experiences of professional writers.

ii. Need

Currently, English majors at UVU have the option of getting an emphasis in Literary Studies or Creative Writing. Students who aspire to careers as technical or professional writers have a difficult time putting together solid preparation through a careful selection of elective courses or by adding a Technical Communication minor to their BA/BS degree. However, given the widespread demand for expert thinkers, researchers, and communicators—for professional writers—the lack of a baccalaureate degree emphasis that focuses systematically on the study of written communication and the cultivation of professional writers leaves a significant void in the program curriculum.

iii. Institutional Impact

UVU does not anticipate any need for new resources, faculty, physical facilities, or equipment as a result of the addition of a Writing Studies emphasis. The new emphasis will be administered using the existing structure of the English and Literature Department. Of the fourteen courses which constitute the proposed curriculum, only four are new courses. Thus, the instructional load of the new emphasis will be readily manageable with existing faculty resources.

iv. Finances

Because all necessary faculty and all but four courses of the proposed curriculum are already in place, there will be no additional costs or other financial repercussions resulting from the addition of the Writing Studies emphasis.

Recommendation

The Commissioner recommends approval of the Emphases needing Regents' approval as noted.

William A. Sederburg
Commissioner of Higher Education

WAS/GSW

I. Emphasis in Energy Engineering, Department of Chemical Engineering

A. 1.0 Introduction

Three of the major challenges facing humanity are limitations in the supplies of food, water, and energy. The proposed emphasis in energy engineering is meant to give undergraduates in Chemical Engineering a suite of technical electives that will equip them with the engineering and professional skills required to address the need for clean and secure energy. Environmental protection, energy use, and energy production are included in the emphasis. The appearance of the emphasis on students' transcripts and resumes will help potential employers and graduate programs identify those with an interest and background in energy engineering.

The emphasis will require 15 units and this requirement fits within the current requirement of 17 hours of technical electives in Chemical Engineering. The Chemical Engineering Program requires 130 hours and is summarized as an attachment to this proposal.

1. 1.1 Core Electives

Table 1 lists the core electives for the proposed emphasis. Students will complete 9 units from these 6 courses. The core courses include petroleum and natural gas engineering (5155, 5157, and 5159), combustion engineering (5153), air pollution control engineering (5305) and green engineering (5307). The latter includes energy conservation via process synthesis, pollution prevention, and the fate of contaminants in the environment. One additional core elective is planned, Production Engineering III, that will cover production management and transportation.

Table 1 Core Chemical Engineering Courses in Energy (9 units required)

Course	Title	Units	Comments
CH EN 5153	Fundamentals of Combustion	3	
CH EN 5155	Reservoir Engineering	3	
CH EN 5157	Production Engineering I	1.5	
CH EN 5159	Production Engineering II	1.5	
CH EN 5305	Air Pollution Control Engineering	3	
CH EN 5307	Green Engineering	3	

2. 1.2 Supporting Electives

Table 2 lists supporting courses that provide a broad overview of energy related topics including climate change, sustainability, geology, ethics, and statistics. The supporting courses also include nuclear engineering and the design of thermal systems for power plants. Two of the supporting courses satisfy other undergraduate requirements: PHIL 4540 satisfies the humanities foundation requirements and PHYS 3150 satisfies the international requirement. One additional supporting course is planned, an introduction to logging and geophysics.

Table 2 Supporting Courses in Other Departments (6 units required)

Course	Title	Units	Comments
ATMOS 5400	The Climate System	3	
ECE 2210	Electrical and Computer Engineering for Non-majors	3	
ECE 3600	Introduction to Electric Power Engineering	3	
GEO 5220	Seismology II: Exploration and Engineering Seismology	3	
GEO 5240	Physical Fields II: Electrical Methods	3	
GEO 5260	Petrophysics and Well Logging	2	
GEO 5370	Contaminant Partitioning for Scientists & Engineers	3	
GEO 5390	Solute Transport and Subsurface Remediation	3	
GEO 5690	Aqueous Geochemistry for Engineers & Scientists	3	
GEO 5760	Stratigraphy and Sedimentary Processes	4	
GEO 5920	Fundamentals of Applied Earth Science	1.5	
MATH 3070	Applied Statistics	4	
MATH 3090	Design of Experiments	3	
MATH 3150	Partial Differential Equations for Engineering Students	2	
MATH 5600	Survey of Numerical Methods	4	
ME EN 5800	Sustainable Energy Engineering	3	
ME EN 5810	Thermal Systems Design	3	
NUCL 3000	Nuclear Principles in Engineering and Science	3	
NUCL 4000	Nuclear Engineering and Science Using the TRIGA	3	
NUCL 5100	Reactor Physics	3	
PHIL 4540	Engineering, Ethics, and Society	3	Fulfills HF
PHYS 3150	Energy and Sustainability: A Global Perspective	3	Fulfills IR

B. 2.0 Significance of Energy Engineering

Energy is fundamental to all aspects of our lives. We transform energy from one form to another in order to heat and cool our buildings, cook our food, heat water, go from one place to another, clean our clothes, raise food, purify water, and run the labor saving devices that make our lives so comfortable. We currently rely heavily on fossil fuels to meet our energy needs. Concerns over the limited supplies of these fuels and over their environmental impact make energy engineering a critically important discipline.

The increasing awareness of the importance of energy in our society is leading to the development of departments, programs, institutes, journals, and professional organizations devoted to energy. For example, at Stanford University you will find the Department of Energy Resources Engineering and the Global Climate & Energy Project (http://pangea.stanford.edu/ERE/index.php and http://gcep.stanford.edu/). Penn State has a new undergraduate program entitled, Energy Engineering. The University of Utah is home to the Institute for Clean and Secure Energy (http://www.icse.utah.edu/) and the Energy and Geoscience Institute (http://www.egi.utah.edu/).

As a profession, energy engineers are represented by several professional societies that also publish energy-related journals. The Association of Energy Engineers (AEE) (http://www.aeecenter.org/) publishes three journals: *Energy Engineering, Strategic Planning for Energy and the Environment*, and *Cogeneration & Distributed Generation*. The American Society of Civil Engineers (ASCE) publishes the *Journal of Energy Engineering*. The American Institute of Chemical Engineers (AIChE) publishes *Environmental Progress and Sustainable Energy*. The American Chemical Society (ACS) publishes *Energy and Fuels* and *Environmental Science and Technology*. The Society of Petroleum Engineers has more than 90,000 members worldwide and publishes the *Journal of Petroleum Technology*.

C. 3.0 Synergy with Chemical Engineering Major

The Chemical Engineering Program provides a natural home for an emphasis in energy engineering because its required curriculum includes basic science and engineering courses that are fundamental to energy engineering. Some of the relevant required courses are summarized in Table 3.
In addition, the Chemical Engineering Program requires 17 hours of technical elective credits. Of these, at least 9 are usually in Chemical Engineering, at least two must be in upper division mathematics, and the balance can be from departments other than Chemical Engineering. Hence, it will be possible for students to complete their technical elective requirements inside the proposed energy engineering emphasis.

Table 3 Required, Energy-related Courses in Chemical Engineering Program

Course	Title	Units	Comments
PHYS 2210	Physics for Scientists and Engineers I	4	
PHYS 2220	Physics for Scientists and Engineers II	4	
CH EN 2300	Thermodynamics I	2	
CH EN 2800	Fundamentals of Process Engineering	3	
CHEM 2310	Organic Chemistry I	4	Lab as 2315
CHEM 3060	Quantum Chemistry	4	
CH EN 3353	Fluid Mechanics	3	
CH EN 3453	Heat Transfer	3	
CH EN 3853	Chemical Engineering Thermodynamics	3	
CH EN 3603	Mass Transfer & Separations	3	
CH EN 3553	Chemical Reaction Engineering	3	
CH EN 4203	Process Control	3	
CH EN 4253	Process Design I	3	
CH EN 5253	Process Design II	3	

D. 4.0 Supporting Documents

A supporting letter from Dean Richard Brown is attached, followed by the standard, four-year Chemical Engineering Program of Study.

THE UNIVERSITY OF UTAH

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http://www.coe.utah.edu/~brown

July 22, 2010

Professor John G. Francis
Associate Vice President
Undergraduate Studies
University of Utah

Dear John:

I am writing in support of the Energy Engineering Emphasis in the Undergraduate Chemical Engineering program. Providing adequate energy to the growing population while safegaurding the environment is one of the greatest challenges of our time. I beileve it is the right time to institute this option in Chemical Engineering for the following reasons.

- Chemical Engineering students are appreciating the fact that energy is an important component in their discipline. They are asking for more exposure to energy related courses because there are jobs in the energy sector and because they feel that they can make a difference by working in this field.
- The Energy industry is going through a transition of sorts. There is a recognition that the low-carbon, green energy sources will continue to grow. The fossil energy sector will still play a dominant role over the next few decades. Innovative engineers will be needed in the new energy sector, and to manage the conventional sector efficiently and responsibly. Demographics of the conventional sector are such that large numbers of engineers will be needed to fill anticipated retirements.
- The Department of Chemical Engineering has always had a strong energy research component. The College of Engineering and all of its departments will be able to provide students with a balanced view on energy development. Active collabotration with the Energy and Geoscience Institute adds another dimension to this educational initiative that is not commonly available in other universities. These facets will ensure that a unique, high-quality program will be delivered.
- The state of Utah is home to vast amounts of conventional energy resources (oil, gas and coal) which are currently being utilized. The state is also at the forefront of some commercial development in geothermal and wind energy. Providing a quality energy emphasis option is in the best interest of the state.
- The program is structured so that the number of credit hours required to graduate in Chemical Engineering will not be affected. The students will acquire this aditional skill set without losing any other critical component.

This or similar programs will be applied college-wide based on the experiences and lessons learned in this effort. I request the Undergraduate Council to approve this emphasis in Chemical Engineering.

Best Regards,

Richard B. Brown
Dean of Engineering

FOUR-YEAR PROGRAM IN CHEMICAL ENGINEERING

FIRST YEAR

FALL SEMESTER
MATH 1210 or 1270 Calculus I[1] (4)
CHEM 1210 General Chemistry I (4)
CHEM 1215 General Chemistry Lab I (1)
WRTG 2010 Intermediate Writing (3)
CH EN 1703 Intro to Computing in ChE (2)
General Education (3)
TOTAL HOURS: 17

SPRING SEMESTER
MATH 1220 or 1280 Calculus II[1] (4)
CHEM 1220 General Chemistry II[2] (4)
CHEM 1225 General Chemistry Lab II (1)
PHYS 2210 Phycs For Scien & Eng I (4)
CH EN 4755 Undergraduate Seminar (0.5)
General Education (3)
TOTAL HOURS: 16.5

SECOND YEAR

FALL SEMESTER
MATH 2250 Diff Equ & Lin Algebra (4)
ME EN 1300 Statics and Strength of Matls (4)
PHYS 2220 Phycs For Scien & Eng II (4)
PHYS 1809 General Physics Laboratory (1)
CH EN 2450 Numerical Methods (2)
General Education (3)
TOTAL HOURS: 18

SPRING SEMESTER
MATH Technical Elective[3] (Math) (2 to 4)
CH EN 2300 Thermodynamics I (2)
CH EN 2800 Fund. of Process Engineering (3)
CHEM 2310 Organic Chemistry I[4] (4)
CHEM 2315 Organic Chemistry lab I[4] (1)
CH EN 4755 Undergraduate Seminar (0.5)
General Education (3)
TOTAL HOURS: 17.5

THIRD YEAR

FALL SEMESTER
CHEM 3060 Quantum Chem (4)
CH EN 3353 Fluid Mechanics (3)
CH EN 3453 Heat Transfer (3)
CH EN 3853 Chemical Eng Thermo (3)
CH EN 4753 Undergraduate Seminar (0.5)
Technical Elective[3] (3)
TOTAL HOURS: 16.5

SPRING SEMESTER
CH EN 3603 Mass Transfer & Separations (3)
CH EN 3553 Chemical Reaction Eng (3)
CH EN 5103 Biochemical Engineering (3)
Technical Electives[3] (4)
General Education/Bachelor Degree Requir. (3)
TOTAL HOURS: 16

FOURTH YEAR

FALL SEMESTER
CH EN 4903 Projects Laboratory I (4)
CH EN 4253 Process Design I (3)
CH EN 4203 Process Control (3)
CH EN 4753 Undergraduate Seminar (0.5)
Technical Elective[3] (3)
General Education (3)
TOTAL HOURS: 16.5

SPRING SEMESTER
CH EN 4905 Projects Laboratory II[5] (3)
CH EN 5253 Process Design II (3)
Technical Elective[3] (3)
General Education (3)
TOTAL HOURS: 12

GRAND TOTAL HOURS: 130

1. Students with adequate math preparation are encouraged to take the MATH 1270 and 1280, Accelerated Engineering Calculus series, in place of MATH 1210 and 1220. Students who take 1210/1220 are encouraged to take MATH 2210 as a technical elective.
2. Students who qualify should take CHEM 1221, Honors General Chemistry II and CHEM 1241, Honors General Chemistry Lab II, instead of CHEM 1220, General Chemistry II, and CHEM 1225, General Chemistry Lab II.
3. A total of 17 credit hours of technical elective courses are required.
4. Students who qualify should take CHEM 2311, Honors Organic Chemistry I, instead of CHEM 2310.
5. CH EN 4905 fulfills the Upper-division Writing/Communication requirement.

THE UNIVERSITY OF UTAH

Laura Snow
Special Assistant to the President
and
Secretary to the University

October 21, 2010

Dr. Teddi Safman
Assistant Commissioner for Academic Affairs
State Board of Regents
60 South 400 West
Salt Lake City, Utah 84101-1284

Dear Dr. Safman:

Enclosed is the signature page for the item approved by the University of Utah Board of Trustees at their meeting of October 12, 2010. The item is as follows:

- Emphases in Energy Engineering

An electronic copy of the documentation has been sent by Becky Riley, my assistant. If you have any questions, please contact her at 801-581-5113.

Sincerely,

Laura Snow
Special Assistant to the President and
Secretary to the University

LS/rmr

Encl.

Office of the President
201 South Presidents Circle, Room 201
Salt Lake City, UT 84112-9009
(801) 581-5113
FAX: (801) 581-3654
E-mail: laura.snow@utah.edu

Please forward
David W. Pershing
9/10/10

THE UNIVERSITY OF UTAH

Office of Undergraduate Studies
195 S. Central Campus Drive Salt Lake City, UT 84112-0511 (801) 581-3811 FAX (801) 585-3581

Approved
Please forward
9/14/10

September 8, 2010

TO: David Pershing
Senior Vice President for Academic Affairs

FR: John Francis
Chair, Undergraduate Council

RE: Emphasis in Energy Engineering, Department of Chemical Engineering

---

At its meeting of Tuesday, September 7, 2010, the Undergraduate Council voted unanimously to approve a proposal from the Department of Chemical Engineering to have an emphasis in Energy Engineering listed on the transcripts of Chemical Engineering majors who complete the prescribed program of study. A copy of the proposal is attached.

We are asking you, if you also approve of the proposal, to forward it on to the Executive Committee of the Academic Senate for their information.

THE UNIVERSITY OF UTAH

Richard B. Brown
Dean of Engineering
1692 Warnock Engineering Building
72 S. Central Campus Drive
Salt Lake City, Utah 84112
PH: (801) 585-7498 FAX: (801) 581-8692
brown@utah.edu
http://www.coe.utah.edu/~brown

July 22, 2010

Professor John G. Francis
Associate Vice President
Undergraduate Studies
University of Utah

Dear John:

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Best Regards,

Richard B. Brown
Dean of Engineering

Section I: Request

The English and Literature department at Utah Valley University requests authorization to add a new emphasis in Writing Studies to the BA and BS in English degrees effective Fall, 2011. By adding four new courses to the curriculum, the department will be able to organize the existing writing, rhetoric, and technical communication courses into a new emphasis that will enable students to earn the knowledge, skills, and experiences of professional writers. This action was approved by the UVU Board of Trustees on October 28, 2010.

Section II: Need

Currently, English majors at UVU have the option of getting an emphasis in Literary Studies or Creative Writing. Students who aspire to careers as technical or professional writers can cobble together some fairly solid preparation through a careful selection of elective courses or by adding a Technical Communication minor to their BA/BS degree. However, given the widespread demand for expert thinkers, researchers, and communicators—for professional writers—the lack of a bachelor degree emphasis that focuses systematically on the study of written communication and the cultivation of professional writers leaves a significant void in our program curriculum.

We propose to fill this void with a new emphasis. The Writing Studies emphasis will provide expertise in the analysis and production of written texts in professional, academic, and civic contexts. We anticipate that graduates of this program will take professional positions as writers and editors in fields such as business, publishing, technical writing, and others. The emphasis will also prepare students for graduate-level work in law, business, professional writing, rhetoric, composition studies, and related fields.

The Writing Studies emphasis will round out UVU's English degree offerings and give students access to the kind of curriculum that is becoming a core component of English programs across the nation as well as in Utah. Currently, 48% of English departments nationwide offer a major and/or minor in Writing or Professional Writing, and that percentage is "growing at an impressive rate," according to the February 2010 issue of *College Composition and Communication*. In Utah, Dixie College, Weber State, and Utah State all offer a BA/BS emphasis in Professional and Technical Writing, while Salt Lake CC has a new Writing Certificate of Completion. The new emphasis will fit very well within the specific educational mission of UVU: by requiring internships and offering a curriculum that is arguably more explicitly linked to a designated career path than Literary Studies or Creative Writing, Writing Studies clearly will "foster engaged learning" and "prepare professionally competent people."

Section III: Institutional Impact

We do not anticipate any need for new resources, faculty, physical facilities, or equipment as a result of the addition of a Writing Studies emphasis. The new emphasis will be administered using the existing structure of the English & Literature department. Of the fourteen courses that constitute the proposed curriculum, only four are new courses. Thus the instructional load of the new emphasis will be readily manageable with existing faculty resources, particularly given the new lines in Rhetoric and Composition the department was allocated in the 2009-2010 PBA cycle. We do anticipate a modest increase in the number of English majors and in the enrollments of our technical communication and other professional writing courses, as this new emphasis option will appeal to some students that our current emphases do not directly address. But again, given the two faculty lines the department was recently given, any such enrollment increases will be

manageable. Finally, we anticipate a campus-wide benefit in the form of improved tutoring in the UVU Writing Center, as many students in the Writing Studies emphasis will pursue internship credit by working in the Writing Center.

Section IV: Finances

Because all necessary faculty and all but four courses of the proposed curriculum are already in place, there will be no additional costs or other financial repercussions resulting from the addition of the Writing Studies emphasis.

Appendix A: New Courses

Prefix & Number	*Title*	*Credit Hours*
ENGL 2040	Introduction to Writing Studies	3
ENGL 3060	Visual Rhetoric	3
ENGL 3070	Public Rhetorics and Popular Media	3
ENGL 4340	Advanced Document Design	3

ENGL 2040 Introduction to Writing Studies 3:3:0
Introduces the academic discipline of Writing Studies by surveying the major historical developments in the field since its inception. Discusses contemporary concepts and methods available for study of the composing process. Examines the importance of writing as a social and communicative skill. Emphasizes the teaching of writing as a skill that may increase a student's opportunities for employment. Includes workshops, presentations, portfolios, and researching and composing a substantive semester project.

ENGL 3060 Visual Rhetoric 3:3:0
Investigates the growing academic and cultural interest in the rhetorical nature of visual texts. Teaches critical thinking about the consumption and productions of images and multimodal texts. Explores visual grammars and other theories of visual rhetoric as articulated by contemporary image, language, and rhetoric scholars. Encourages the development of theoretical and practical knowledge through reading, discussion and analysis as well as through the production of visual texts and written work.

ENGL 3070 Public Rhetorics and Popular Media 3:3:0
Investigates the structure and nature of rhetorical arguments present in popular and public discourse. Studies texts in mediums such as advertising, blogs, film, social networking venues (i.e. Facebook, Twitter), television, websites, and YouTube through specific rhetorical theories of public communication. Examines arguments regarding the complex nature of public ethos, particularly in the contexts of existing, emergent, and future digital identities. Teaches critical thinking about public rhetorics and popular media to inform consumption and production of public texts in multiple disciplines and contexts. Includes reading, discussion, analysis and production of public rhetorics through conventional and new media methods.

ENGL 4340 Advanced Document Design 3:3:0
Continues work begun in ENGL 2310. Teaches user-centered document design. Involves the creation of a full-length project, including initial proposals and research, drafting, collaboration, usability testing, and document management. Emphasizes building a professional portfolio and preparing job search materials.

Institution Submitting Proposal:	**UTAH VALLEY UNIVERSITY**
College:	**Humanities and Social Sciences**
Department or Area in Which Program Will Be Located:	**English and Literature**
Program Title:	**BA/BS English with an emphasis in Writing Studies**
Recommended Classification of Instructional Programs (CIP) Code:	**23.0101**
Proposed Beginning Date:	**Fall, 2011**

Institutional Signatures:

_____

Matthew S. Holland, University President
Utah Valley University

_____

Ian Wilson
Interim Vice President for Academic Affairs

_____

David Yells
Dean

_____

Robert Cousins
Department Chair

Date: 10/15/2010

UTAH SYSTEM OF HIGHER EDUCATION
Building a Stronger State of Minds℠

State Board of Regents
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January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Programs and Planning Committee—Proposed Revision to Regents' Policy R 473.

Issue

The Regents have had a long-standing policy governing the award of credit to students who complete course work in a non-credit format. Historically, the policy was specifically to define how higher education credit could be awarded to students who completed course work at what was previously called an "Applied Technology Center." With the further development of the Utah College of Applied Technology (UCAT), there is now a need to revise and expand this policy.

Background

The process for awarding credit by an institution within the Utah System of Higher Education (USHE) is guided by individual institutional policy and accreditation. The evaluation of student learning or achievement and the awarding of credit must be based upon clearly stated and distinguishable criteria. When an institution receives transfer credit from other institutions, procedures are required that provides adequate safeguards to ensure the credit awarded is of high academic quality and relevant to the students' programs.

In an effort to provide a procedure for appropriately assigning credit for learning in institutions where credit is not awarded, Policy R473 has been re-written. This policy specifically addresses how membership hours received at the Utah College of Applied Technology (UCAT) can be transferred to a USHE institution. The proposed policy has been reviewed by USHE institutions and UCAT and the policy is viewed as a positive step for acknowledging the learning that occurs for students enrolled in UCAT institutions.

The purpose of the proposed policy is to assure the integrity and consistency of the process of awarding credit for instruction received in formal instructional settings where academic credit is not awarded but measured by non-credit units (clock hours, continuing education units, competency assessments).

Recommendation

The Commissioner recommends approval of the amendments to Regents' Policy R473 (Standards for Granting Academic Credit for CTE Course Work Completed in Non-Credit Instructional Formats).

William A. Sederburg
Commissioner of Higher Education

WAS/GSW

Attachment

UTAH SYSTEM OF HIGHER EDUCATION
Building a Stronger State of Minds

R473, Standards for Granting Academic Credit for CTE Course Work Completed in Non-Credit Instructional Formats.

R473-1. Purpose: To assure the integrity and consistency of the process of awarding credit for instruction received in formal instructional settings where academic credit is not awarded but measured by a non-credit unit (clock hours, continuing education units, competency assessments).

R473-2. References

2.1. Utah Code §53B-2A (Utah College of Applied Technology)

2.2. Utah Code §53B-2-106(2)(c) (Examination, Admission, and Classification of Students)

2.3. Utah Code §53B-16-102 (Changes in Curriculum)

2.4. Policy and Procedures R401, Program Approval

2.5. Policy and Procedures R411, Review of Existing Programs

2.6. Policy and Procedures R470, General Education, Course Numbering, Lower-Division Pre-Major Requirements, Transfer of Credits, and Credit by Examination.

R473-3. Definitions

3.1. **"USHE"**: the Utah System of Higher Education

3.2. **" UCAT"**: Utah College of Applied Technology.

3.3. **"Non-credit Course"**: instruction delivered in a class in a non-credit format where the instructional competencies are defined, course work completed and assessed, and the instructional unit of measure is generally clock hours, continuing education units (CEUs), or competency assessments.

3.4. **"Written Credit Articulation Agreement"**: an agreement that specifies the terms and conditions for articulating instructional competencies between non-credit courses and credit courses. This formal agreement is approved by the receiving institution and aligns course work between originating and receiving institutions.

R473-4.Converting Non-credit Instruction to Credit.

4.1. **Awarding of Credit Based on Comparability of Course Work**: USHE credit-granting institutions award credit for non-credit courses according to individual institution policy and with the execution of a Written Credit Articulation Agreement. Higher education credit awarded to students completing non-credit courses is based upon comparability between the non-credit course and an existing credit course offered by a USHE institution. Non-credit course competencies that are congruent with existing credit course competencies at community colleges or universities may be awarded college credit. Approval for a "Written Credit Articulation Agreement" must be requested by the non-credit administrator and approved in writing by the CAO of the higher education institution before credit is awarded.

4.2. Evaluation by Receiving Institution: After a formal request is received, receiving USHE institutions will evaluate non-credit courses for approval of awarding credit. Review of course content, objectives and outcomes, procedures, examinations, and teaching materials, for determining equivalency, is the responsibility of the receiving higher education program or department. Course competencies must be equivalent, and instruction must be delivered by an appropriately credentialed instructor. Students awarded higher education credit for non-credit courses shall not be required to re-demonstrate competencies achieved in those courses if the instruction has taken place in the prior 12 months. Institutional policy may allow for additional time beyond the 12 months.

4.3. Student Application for Higher Education Credit: The award of credit for non-credit courses is predicated on formal admission by the student to the credit-granting institution. For non-credit courses included in fully executed Written Credit Articulation Agreement s, students are required to apply for higher education credit within12 months after completion of the non-credit course(s). Institutional policy may allow for additional time beyond the 12 months.

4.6. Transferability of Awarded Credit: Credit approved by one USHE credit-granting institution for a non-credit course or courses shall ensure acceptance of the credit as transfer credit at any other USHE credit-granting institution, as per R 470. Courses transferred to another USHE credit-granting institution will be subject to the receiving institution's normal transfer credit policies.

4.7. Tuition and/or Fees Charged by USHE Institution: The receiving USHE institution may assess a one-time application/admission fee, at its current admission fee rate, at the time of the initial request for credit. A normal recording fee may be charged for recording credit for non-credit instruction according to the terms of the Written Credit Articulation Agreement. In harmony with Policy A-6 of the Northwest Commission on Colleges and Universities Accrediting Guidelines, regular tuition and fees will be charged when a Dual Enrollment Model is used and the USHE credit-granting institution contracts with a third party for instruction. The total tuition for any specific given course should be the same for all persons at any given time. Tuition charges in courses should be bona fide, effective on specific dates, and applicable to all who enroll thereafter or are presently in school, provided the enrollment agreement so stipulates. All extra charges and costs incidental to training should be disclosed to prospective students before they are enrolled.

R473-5. USHE Class Credit

5.1. Full Credit for USHE Classes: Students applying for credit for a non- credit course shall receive full credit at the receiving USHE institution for the course, if articulated. There is no provision for awarding partial course credit. Credit will be awarded after meeting the campus requirements for the specific certificate or degree in which the student has been enrolled.

5.2. Audit Credit not Applicable. USHE credit-bearing classes completed on an audit basis may not, at a later date, be transferred for credit.

R473-6. Written Credit Articulation Agreements

6.1. Agreements in Written Form; Distribution: Articulation agreements between non-credit programs and USHE credit-granting institutions will be in written form. Copies of these agreements will be provided to the Office of the Commissioner of Higher Education solely to enhance coordination of related activities within the state. Agreements will be updated annually by the participating institutions.

R473-7. Non-credit to credit options

7.1. Dual Enrollment Model: Students enroll in a non-credit course or courses where the USHE credit-granting institution has contracted with a third party to provide the instruction; the third party provider may generally offer non-credit courses. The educational experience is offered under the direction of the higher education institution. The selection process for course materials and faculty is the same as occurs on campus or at other off-campus sites.

7.2 Credit Awarded through Established Articulation Agreement: Students enroll in a non-credit course or courses through a third party. The USHE credit-granting institution has not contracted with a third party to provide the instruction, but has evaluated the non-credit course competencies and has executed a Written Credit Articulation Agreement with the non-credit provider to award credit for successful completion.

7 2.1 Credit Awarded for Instructional Programs Completed at a campus of the Utah College of Applied Technology:

Technical programs at campuses of the Utah College of Applied Technology may be considered for articulation with USHE institutions under the following conditions.

7.2.1.1 Articulation to an existing AAS Degree in General Technology:

1. Students who have completed a technical program at a campus of the Utah College of Applied Technology, consisting of at least 900 membership hours, and where there is an written articulation agreement in place with a USHE institution. The 900 (plus)-membership hour program will fulfill the 30 credit hour requirement of technical specialty within the AAS in General Technology.
2. Students must meet the regular admission requirements for the receiving USHE institution as published in the institutional catalog.
3. The student must provide an official transcript from the Utah College of Applied Technology.
4. The student who is admitted to degree admission status must meet all applicable pre requirements as indicated by the appropriate placement instrument.
5. The student is required to complete the specified general education component at the community college or university.
6. Upon fulfillment of the requirements stated above, the student will receive thirty (30) semester hours of credit toward an existing A.A.S. degree with a compatible technical requirement or the A.A.S. degree in General Technology for the approved work completed at a UCAT campus. Credit for work completed at a UCAT campus will be posted at the USHE institution following completion of the USHE institution's program requirements. The credit posted on the transcript will not count in the calculation of the student's grade point average. Upon successful completion of all program requirements, the student will be awarded the Associate of Applied Science Degree.

7.2.1.2 Articulation to Specific Majors in Community Colleges

Community colleges and technology centers may enter into agreements for the articulation of specific programs that lead to the award of the A.A.S. degree in particular majors.

1. The institutions involved must agree that the learning outcomes specified in courses and/or programs offered by the UCAT campus satisfy learning outcomes in similar courses offered by the community college. Syllabi, including assessment measures for course competencies, of the courses from the institutions involved must be maintained and documented.

2. Semester hour credit awarded by the USHE institution in specific articulated programs will be proportionate to the equivalence of credits attained in the technical or career program offered by the UCAT campus. The number of semester hours awarded in specific articulated programs may be up to thirty (30) semester hours and must fit within the requirements of the specified certificate or degree.

7.3 Credit Awarded for Non-Credit Courses Completed Without an Articulation Agreement: If a student enrolls in a non-credit course or courses through a third party and the USHE credit-granting institution has not contracted with the third party. The USHE credit-granting institution may award credit given it can determine the experience is comparable to specific credit course work, following individual institution policy.

7.4. Credit Awarded for Competency Testing: USHE institutions currently award credit to admitted students who wish to challenge a particular course. By satisfactorily demonstrating achievement or competency through sitting for a comprehensive final examination or some other competency examination, students may be awarded credit for the course. It is not presumed that colleges or universities would be required to develop competency examinations in subject areas where the institution does not have equivalent course work. (See Policy and Procedures R470.)

Appendix

Articulation of Courses Between Credit-Granting USHE Institutions and UCAT Campuses

The following process will guide USHE institutions in articulating with the Utah College of Applied Technology.

House Bill 15 specifies that the Utah System of Higher Education (USHE) will articulate courses with the Utah College of Applied Technology (UCAT) providing students with an educational pathway for selected courses.

> *(c) The board shall coordinate and support articulation agreements between the Utah College of Applied Technology and other institutions of higher education.*

Working within Regents Policy (R473), and in harmony with the standards of the Northwest Commission on Colleges and Universities, articulation agreements may be formed between a credit-granting USHE institution and a UCAT Campus under one of four conditions (see below)\.

The UCAT campus wishing to form an articulation agreement with a credit-granting USHE institution should first approach the USHE institution within the local service delivery area.

1. If the credit-granting institution has approved course(s), and desires to complete an articulation agreement, the articulation agreement may be completed through normal institutional processes.

2. If the credit-granting institution does not wish to complete an articulation agreement, they may decline to participate and the UCAT campus may contact other USHE institutions who may be interested.

3. If the local credit-granting USHE institution does not have the approved course(s), and wishes to complete an articulation agreement, the USHE institution has the option to seek approval for the course(s) through the normal institutional and Regent process.

4. If the local USHE institution does not have the approved course(s) and does not have a desire to establish the course(s), the UCAT campus may approach another credit-granting USHE institution that has the approved course(s) and desires to enter into an articulation agreement.

The Office of the Commissioner shall maintain a list of course articulations between UCAT campuses and credit-granting USHE institutions. Institutions are required to submit an updated list of formal articulation agreements by June 30 or each academic year.

SAMPLE
Utah System of Higher Education
Credit Articulation Agreement for Non-Credit Learning experiences
FY2010-11

This Agreement, between (USHE Institution), a USHE credit-granting institution, and (Third Party Non-Credit Learning Provider) specifies the terms and conditions for the granting of (USHE Institution) credit for non-credit course work successfully completed with an external education or training provider. The parties enter into this Agreement on the ___ day of ____, 20__.

I. CREDIT ARTICULATION CONSIDERATIONS

This Agreement covers (list non-credit course or courses). The administrative model may be considered dual enrollment or credit awarded through an established articulation agreement as defined in R473.

A. Description. (*Describe the non-credit course(s) learning objectives or competencies, assessments, and learning outcomes. Attach a list of the courses covered by this agreement for which credit is sought. Attach a copy of all non-credit curriculum.*)

B. Special Provisions. (*Detail financial arrangements, special provisions and conditions for completion of non-credit course(s) that will lead to the award of credit.*)

II. EVALUATION & AMENDMENT

This agreement is in effect for instruction completed during the FY2010-11 academic year. Both parties must communicate changes in curriculum and/or in credit articulation in a timely manner. The Agreement may be terminated at the end of the academic year by either party. The decision to renew or terminate the credit articulation agreement should be made within 30 days of the beginning of the next academic year.

III. EXECUTION

The parties hereby execute this Credit Articulation Agreement as of the day and year first written above.

for (USHE institution)

_____ _____
by _____ date
(Title)

for (Third Party Non-Credit Learning Provider)

_____ _____
by _____ date
(Title)

Utah System of Higher Education
Credit Articulation Agreement for
Non-Credit Learning Experiences
FY2010-11

Course List

USHE Institution:
Contact Name:
Contact Phone:
Contact Email:

Non-Credit Learning Provider:
Contact Name:
Contact Phone:
Contact Email:

Non-Credit Courses				USHE Credit to be Granted				
Course Prefix	Course Number	Course Title	Participation (M_Hrs, CEUs)	Course Prefix	Course Number	Course Title	Credits Awarded	Conditions of Articulation

UTAH SYSTEM OF HIGHER EDUCATION
Building a Stronger State of Minds℠

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Salt Lake City, Utah 84101-1284

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TDD 801.321.7130
www.utahsbr.edu

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Programs and Planning Committee—Proposed Revision to Regents' Policy R 473.

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The Regents have had a long-standing policy governing the award of credit to students who complete course work in a non-credit format. Historically, the policy was specifically to define how higher education credit could be awarded to students who completed course work at what was previously called an "Applied Technology Center." With the further development of the Utah College of Applied Technology (UCAT), there is now a need to revise and expand this policy.

Background

The process for awarding credit by an institution within the Utah System of Higher Education (USHE) is guided by individual institutional policy and accreditation. The evaluation of student learning or achievement and the awarding of credit must be based upon clearly stated and distinguishable criteria. When an institution receives transfer credit from other institutions, procedures are required that provides adequate safeguards to ensure the credit awarded is of high academic quality and relevant to the students' programs.

In an effort to provide a procedure for appropriately assigning credit for learning in institutions where credit is not awarded, Policy R473 has been re-written. This policy specifically addresses how membership hours received at the Utah College of Applied Technology (UCAT) can be transferred to a USHE institution. The proposed policy has been reviewed by USHE institutions and UCAT and the policy is viewed as a positive step for acknowledging the learning that occurs for students enrolled in UCAT institutions.

The purpose of the proposed policy is to assure the integrity and consistency of the process of awarding credit for instruction received in formal instructional settings where academic credit is not awarded but measured by non-credit units (clock hours, continuing education units, competency assessments).

Recommendation

The Commissioner recommends approval of the amendments to Regents' Policy R473 (Standards for Granting Academic Credit for CTE Course Work Completed in Non-Credit Instructional Formats).

William A. Sederburg
Commissioner of Higher Education

WAS/GSW

Attachment

UTAH SYSTEM OF HIGHER EDUCATION
Building a Stronger State of Minds

R473, Standards for Granting Academic Credit for CTE Course Work Completed in Non-Credit Instructional Formats.

R473-1. Purpose: To assure the integrity and consistency of the process of awarding credit for instruction received in formal instructional settings where academic credit is not awarded but measured by a non-credit unit (clock hours, continuing education units, competency assessments).

R473-2. References

2.1. Utah Code §53B-2A (Utah College of Applied Technology)

2.2. Utah Code §53B-2-106(2)(c) (Examination, Admission, and Classification of Students)

2.3. Utah Code §53B-16-102 (Changes in Curriculum)

2.4. Policy and Procedures R401, Program Approval

2.5. Policy and Procedures R411, Review of Existing Programs

2.6. Policy and Procedures R470, General Education, Course Numbering, Lower-Division Pre-Major Requirements, Transfer of Credits, and Credit by Examination.

R473-3. Definitions

3.1. **"USHE"**: the Utah System of Higher Education

3.2. **" UCAT"**: Utah College of Applied Technology.

3.3. **"Non-credit Course"**: instruction delivered in a class in a non-credit format where the instructional competencies are defined, course work completed and assessed, and the instructional unit of measure is generally clock hours, continuing education units (CEUs), or competency assessments.

3.4. **"Written Credit Articulation Agreement"**: an agreement that specifies the terms and conditions for articulating instructional competencies between non-credit courses and credit courses. This formal agreement is approved by the receiving institution and aligns course work between originating and receiving institutions.

R473-4.Converting Non-credit Instruction to Credit.

4.1. **Awarding of Credit Based on Comparability of Course Work**: USHE credit-granting institutions award credit for non-credit courses according to individual institution policy and with the execution of a Written Credit Articulation Agreement. Higher education credit awarded to students completing non-credit courses is based upon comparability between the non-credit course and an existing credit course offered by a USHE institution. Non-credit course competencies that are congruent with existing credit course competencies at community colleges or universities may be awarded college credit. Approval for a "Written Credit Articulation Agreement" must be requested by the non-credit administrator and approved in writing by the CAO of the higher education institution before credit is awarded.

4.2. Evaluation by Receiving Institution: After a formal request is received, receiving USHE institutions will evaluate non-credit courses for approval of awarding credit. Review of course content, objectives and outcomes, procedures, examinations, and teaching materials, for determining equivalency, is the responsibility of the receiving higher education program or department. Course competencies must be equivalent, and instruction must be delivered by an appropriately credentialed instructor. Students awarded higher education credit for non-credit courses shall not be required to re-demonstrate competencies achieved in those courses if the instruction has taken place in the prior 12 months. Institutional policy may allow for additional time beyond the 12 months.

4.3. Student Application for Higher Education Credit: The award of credit for non-credit courses is predicated on formal admission by the student to the credit-granting institution. For non-credit courses included in fully executed Written Credit Articulation Agreement s, students are required to apply for higher education credit within12 months after completion of the non-credit course(s). Institutional policy may allow for additional time beyond the 12 months.

4.6. Transferability of Awarded Credit: Credit approved by one USHE credit-granting institution for a non-credit course or courses shall ensure acceptance of the credit as transfer credit at any other USHE credit-granting institution, as per R 470. Courses transferred to another USHE credit-granting institution will be subject to the receiving institution's normal transfer credit policies.

4.7. Tuition and/or Fees Charged by USHE Institution: The receiving USHE institution may assess a one-time application/admission fee, at its current admission fee rate, at the time of the initial request for credit. A normal recording fee may be charged for recording credit for non-credit instruction according to the terms of the Written Credit Articulation Agreement. In harmony with Policy A-6 of the Northwest Commission on Colleges and Universities Accrediting Guidelines, regular tuition and fees will be charged when a Dual Enrollment Model is used and the USHE credit-granting institution contracts with a third party for instruction. The total tuition for any specific given course should be the same for all persons at any given time. Tuition charges in courses should be bona fide, effective on specific dates, and applicable to all who enroll thereafter or are presently in school, provided the enrollment agreement so stipulates. All extra charges and costs incidental to training should be disclosed to prospective students before they are enrolled.

R473-5. USHE Class Credit

5.1. Full Credit for USHE Classes: Students applying for credit for a non- credit course shall receive full credit at the receiving USHE institution for the course, if articulated. There is no provision for awarding partial course credit. Credit will be awarded after meeting the campus requirements for the specific certificate or degree in which the student has been enrolled.

5.2. Audit Credit not Applicable. USHE credit-bearing classes completed on an audit basis may not, at a later date, be transferred for credit.

R473-6. Written Credit Articulation Agreements

6.1. Agreements in Written Form; Distribution: Articulation agreements between non-credit programs and USHE credit-granting institutions will be in written form. Copies of these agreements will be provided to the Office of the Commissioner of Higher Education solely to enhance coordination of related activities within the state. Agreements will be updated annually by the participating institutions.

R473-7. Non-credit to credit options

7.1. Dual Enrollment Model: Students enroll in a non-credit course or courses where the USHE credit-granting institution has contracted with a third party to provide the instruction; the third party provider may generally offer non-credit courses. The educational experience is offered under the direction of the higher education institution. The selection process for course materials and faculty is the same as occurs on campus or at other off-campus sites.

7.2 Credit Awarded through Established Articulation Agreement: Students enroll in a non-credit course or courses through a third party. The USHE credit-granting institution has not contracted with a third party to provide the instruction, but has evaluated the non-credit course competencies and has executed a Written Credit Articulation Agreement with the non-credit provider to award credit for successful completion.

7 2.1 Credit Awarded for Instructional Programs Completed at a campus of the Utah College of Applied Technology:

Technical programs at campuses of the Utah College of Applied Technology may be considered for articulation with USHE institutions under the following conditions.

7.2.1.1 Articulation to an existing AAS Degree in General Technology:

1. Students who have completed a technical program at a campus of the Utah College of Applied Technology, consisting of at least 900 membership hours, and where there is an written articulation agreement in place with a USHE institution. The 900 (plus)-membership hour program will fulfill the 30 credit hour requirement of technical specialty within the AAS in General Technology.
2. Students must meet the regular admission requirements for the receiving USHE institution as published in the institutional catalog.
3. The student must provide an official transcript from the Utah College of Applied Technology.
4. The student who is admitted to degree admission status must meet all applicable pre requirements as indicated by the appropriate placement instrument.
5. The student is required to complete the specified general education component at the community college or university.
6. Upon fulfillment of the requirements stated above, the student will receive thirty (30) semester hours of credit toward an existing A.A.S. degree with a compatible technical requirement or the A.A.S. degree in General Technology for the approved work completed at a UCAT campus. Credit for work completed at a UCAT campus will be posted at the USHE institution following completion of the USHE institution's program requirements. The credit posted on the transcript will not count in the calculation of the student's grade point average. Upon successful completion of all program requirements, the student will be awarded the Associate of Applied Science Degree.

7.2.1.2 Articulation to Specific Majors in Community Colleges

Community colleges and technology centers may enter into agreements for the articulation of specific programs that lead to the award of the A.A.S. degree in particular majors.

1. The institutions involved must agree that the learning outcomes specified in courses and/or programs offered by the UCAT campus satisfy learning outcomes in similar courses offered by the community college. Syllabi, including assessment measures for course competencies, of the courses from the institutions involved must be maintained and documented.

2. Semester hour credit awarded by the USHE institution in specific articulated programs will be proportionate to the equivalence of credits attained in the technical or career program offered by the UCAT campus. The number of semester hours awarded in specific articulated programs may be up to thirty (30) semester hours and must fit within the requirements of the specified certificate or degree.

7.3 Credit Awarded for Non-Credit Courses Completed Without an Articulation Agreement: If a student enrolls in a non-credit course or courses through a third party and the USHE credit-granting institution has not contracted with the third party. The USHE credit-granting institution may award credit given it can determine the experience is comparable to specific credit course work, following individual institution policy.

7.4. Credit Awarded for Competency Testing: USHE institutions currently award credit to admitted students who wish to challenge a particular course. By satisfactorily demonstrating achievement or competency through sitting for a comprehensive final examination or some other competency examination, students may be awarded credit for the course. It is not presumed that colleges or universities would be required to develop competency examinations in subject areas where the institution does not have equivalent course work. (See Policy and Procedures R470.)

Appendix

Articulation of Courses Between Credit-Granting USHE Institutions and UCAT Campuses

The following process will guide USHE institutions in articulating with the Utah College of Applied Technology.

House Bill 15 specifies that the Utah System of Higher Education (USHE) will articulate courses with the Utah College of Applied Technology (UCAT) providing students with an educational pathway for selected courses.

> *(c) The board shall coordinate and support articulation agreements between the Utah College of Applied Technology and other institutions of higher education.*

Working within Regents Policy (R473), and in harmony with the standards of the Northwest Commission on Colleges and Universities, articulation agreements may be formed between a credit-granting USHE institution and a UCAT Campus under one of four conditions (see below)\.

The UCAT campus wishing to form an articulation agreement with a credit-granting USHE institution should first approach the USHE institution within the local service delivery area.

1. If the credit-granting institution has approved course(s), and desires to complete an articulation agreement, the articulation agreement may be completed through normal institutional processes.

2. If the credit-granting institution does not wish to complete an articulation agreement, they may decline to participate and the UCAT campus may contact other USHE institutions who may be interested.

3. If the local credit-granting USHE institution does not have the approved course(s), and wishes to complete an articulation agreement, the USHE institution has the option to seek approval for the course(s) through the normal institutional and Regent process.

4. If the local USHE institution does not have the approved course(s) and does not have a desire to establish the course(s), the UCAT campus may approach another credit-granting USHE institution that has the approved course(s) and desires to enter into an articulation agreement.

The Office of the Commissioner shall maintain a list of course articulations between UCAT campuses and credit-granting USHE institutions. Institutions are required to submit an updated list of formal articulation agreements by June 30 or each academic year.

S A M P L E
Utah System of Higher Education
Credit Articulation Agreement for Non-Credit Learning experiences
FY2010-11

This Agreement, between (USHE Institution), a USHE credit-granting institution, and (Third Party Non-Credit Learning Provider) specifies the terms and conditions for the granting of (USHE Institution) credit for non-credit course work successfully completed with an external education or training provider. The parties enter into this Agreement on the ___ day of ____, 20__.

I. CREDIT ARTICULATION CONSIDERATIONS

This Agreement covers (list non-credit course or courses). The administrative model may be considered dual enrollment or credit awarded through an established articulation agreement as defined in R473.

A. Description. (*Describe the non-credit course(s) learning objectives or competencies, assessments, and learning outcomes. Attach a list of the courses covered by this agreement for which credit is sought. Attach a copy of all non-credit curriculum.*)

B. Special Provisions. (*Detail financial arrangements, special provisions and conditions for completion of non-credit course(s) that will lead to the award of credit.*)

II. EVALUATION & AMENDMENT

This agreement is in effect for instruction completed during the FY2010-11 academic year. Both parties must communicate changes in curriculum and/or in credit articulation in a timely manner. The Agreement may be terminated at the end of the academic year by either party. The decision to renew or terminate the credit articulation agreement should be made within 30 days of the beginning of the next academic year.

III. EXECUTION

The parties hereby execute this Credit Articulation Agreement as of the day and year first written above.

for (USHE institution)

_____ _____
by _____ date
(Title)

for (Third Party Non-Credit Learning Provider)

_____ _____
by _____ date
(Title)

Utah System of Higher Education
Credit Articulation Agreement for
Non-Credit Learning Experiences
FY2010-11

Course List

USHE Institution:
Contact Name:
Contact Phone:
Contact Email:

Non-Credit Learning Provider:
Contact Name:
Contact Phone:
Contact Email:

Non-Credit Courses				USHE Credit to be Granted				
Course Prefix	Course Number	Course Title	Participation (M_Hrs, CEUs)	Course Prefix	Course Number	Course Title	Credits Awarded	Conditions of Articulation

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: College Access Challenge Grant Subgrant Recipients

Background

In the spring of 2008, the Board of Regents was designated by Governor Huntsman as the state agency to apply for and receive the College Access Challenge Grant (CACG) from the U.S. Department of Education. The CACG Program is a formula grant created and funded as part of the College Cost Reduction and Access Act of 2007, for the purpose of helping low-income students and families learn about, prepare for, and finance postsecondary education. The CACG program was extended last year through the Health Care and Education Affordability Reconciliation Act. The program at the federal level received an appropriation of $150 million for fiscal years (FY) 2010-2014. The Office of the Commissioner's proposal was approved in August 2010 for fiscal year 2011. This year Utah is eligible to receive $1.5 million dollars of these federal funds. We will have to reapply each year to secure additional funding through 2014. The grant is under the direction of Melissa Miller Kincart, Assistant Commissioner for Outreach and Access, with management support from Kellie Mieremet, CACG Grant Manager, and Stephen Rogers, Outreach Manager for UHEAA.

As outlined in the grant proposal, the Office of the Commissioner of Higher Education, UHEAA, and our college, university, and K-12 partners are pursuing the following three objectives:

1. To provide information to students and families on postsecondary education: benefits, opportunities, planning, financing options including activities associated with financial literacy, FAFSA completion, default prevention and outreach activities for students who may be at risk of not enrolling in or completing college.

2. To develop and deliver professional development events and resources for guidance counselors at secondary schools, as well as financial aid administrators, college admissions, recruitment staff, access and outreach personnel at institutions of higher education, to improve knowledge and capacity to better assist them in their roles in working and to increase students' and parents' understanding of: 1) Admission requirements and application deadlines and processes, 2) financial aid and scholarship opportunities and procedures, 3) academic and financial preparation to improve postsecondary success, 4) activities such as tutoring/ mentoring, and support instruments and models to assist students in preparing for and succeeding in college.

3. To expand and enhance Utah's statewide infrastructure, which will foster partnerships among federal, state, local agencies, community based organizations, businesses and public and higher education to significantly increase the number of under-represented students who enter and who are successful in postsecondary education.

Issue

With these objectives in place, the Office of the Commissioner created and distributed a Request for Proposal (RFP) for the 2010-2011 USHE Subgrant: ImPACT *Improving Preparation, Access, & Communities Together*. The RFP was released in early November throughout the state, and interested applicants were invited to participate in a Technical Assistance meeting on December 1. Completed proposals and letters of support were due on December 20, 2010.

This subgrant opportunity is designed to issue monies to not-for-profit college and university access and outreach programs in an effort to strengthen or encourage collaborations between K-12 schools and communities through offering one or more of the following activities:

1. Provide information on financing options, including activities that promote financial literacy and debt management among students and families.
2. Conduct outreach activities for students who may be at risk of not enrolling in or completing college.
3. Assist students in completing the Free Application for Federal Student Aid (FAFSA).
4. Implement professional development for guidance counselors at middle and secondary schools, and financial aid administrators and college admissions counselors at institutions of higher education, to improve such individuals' capacity to assist students and parents with:
    a. Understanding entrance requirements for admission to institutions of higher education
    b. Applying to institutions of higher education, applying for financial assistance and scholarships
    c. Activities that increase students' ability to successfully complete the coursework required for a postsecondary degree (including tutoring and mentoring)
    d. Activities to improve secondary school students' preparedness for postsecondary entrance examinations.

Through the USHE Subgrant: ImPACT *Improving Preparation, Access, & Communities Together*, applicants were encouraged to partner, establish, strengthen, or expand access and outreach programs geared toward supporting Utah's Big Goal and Utah's CACG objectives with an end result of aiming *to significantly increase the number of low-income and under-represented students who are prepared to enter and succeed in postsecondary education.* Applicants could submit for one of the following levels of funding and were required to demonstrate a 50% institution match:

1. Planning Grant (up to $8,000) to support the planning process for creating a college access program.
2. Start-up Grant (up to $75,000) to support the expansion of an existing college access program.
3. Expansion Grant (up to $50,000) to support the expansion of an existing college access program.

A selection committee, made up of staff from the Office of the Commissioner and from multiple institutions, reviewed twelve outstanding proposals. The selection committee determined the following proposals be approved as submitted and fully funded:

Salt Lake Community College -- Janet Felkner, Student Services, Start-up Grant
Increasing Postsecondary Access & Success for Under-represented Students

This project provides information to students and families on postsecondary education through college financial education and planning, supported preparation of FAFSA applications, and individual financial preparation coaching. Furthermore, comprehensive and high-touch outreach activities are provided, which have been proven to increase student access and enrollment in post-secondary education. Over the 12-month period of this project, 75 juniors and 50 seniors at Horizonte Education and Training Center will have participated in targeted activities uniquely designed to increase their enrollment and persistence at Salt Lake Community College. This pilot program is designed to be evaluated for replication at other secondary/postsecondary partnerships.

Salt Lake Community College -- Tiffany Evans, Learning Resources, Expansion Grant
Increasing Postsecondary College Preparedness in Math

In partnership with the Horizonte Instruction and Training Center, Salt Lake Community College (SLCC) will offer professional development to teachers/staff to increase instructional effectiveness of math competencies required for students to place into credit-bearing math courses. Horizonte instructors will integrate the modularized math curriculum and supplementary tools into their existing instruction. Reciprocal professional development will offer access to an online library of curriculum and supplementary materials. Workshops will be held to encourage students, families and faculty to access such resources. SLCC Faculty will conduct face-to-face instruction with 125 students, preparing them for college-level mathematics.

Southern Utah University -- Dennis Moser, Utah Center for Rural Health, Start-up Grant
Rural High School Partnership Program

The proposed Rural High School Partnership Program will be administered by Southern Utah University's Southern Utah Area Health Education Center (AHEC) to increase the number of students from Beaver, Garfield, Kane and Iron Counties who enroll in and subsequently graduate from SUU. The program will increase students' and counselors' knowledge of career opportunities, educational pathways, the admissions process and financial aid resources. Program components will include monthly activities at each high school for students, counselors and parents; two one-day on-campus "career days," and a one-week "summer camp" program. The program will interface with the highly successful SUU Rural Health Scholars Program into which students will be recruited as the retention component of this project.

University of Utah -- Dolores Delgado Bernal, College of Education, Expansion Grant
Adelante: A College Awareness and Preparatory Partnership

Adelante: A College Awareness and Preparatory Partnership (Adelante) is premised on the belief that all young people in a largely Latina/o community should be expected and prepared to enroll and succeed in college, and that college preparation must emphasize students' intellectual development in relation to community and culture. Adelante provides higher educational experiences to elementary students by taking them to the university and by bringing the university to them via university student mentors of color. It promotes civic engagement and provides service-learning opportunities for the undergraduate students of color who serve as mentors to the elementary school students. This grant proposal is designed to support the expansion of this on-going university-school-community partnership and to build upon and sustain the partnerships and programmatic activities that have been established thus far.

University of Utah -- Paul Gore, Department of Educational Psychology, Start-up Grant
School Counselor Professional Development

Utah lags behind other states in post-secondary participation rates among economically disadvantaged and under-represented students. Information about college access, admissions, and factors that lead to college success is key in promoting higher rates of college participation. School counselors are positioned to provide this information, and professional development opportunities for school counselors represents one way the state of Utah can achieve its 2020 goals. We propose developing, implementing, and evaluating School Counselor Professional Development Institutes throughout the state to equip counselors with the knowledge and skills they need to promote post-secondary participation of more of our high school graduates.

Weber State University -- Ruth Patiño Stubbs, Education Access and Outreach, Start-up Grant
Creating a Pathway to College

This proposal will focus on the "Creating a Pathway to College" Initiative (CPC), which is one of two components that contribute to the broader vision of increasing college participation and completion for under-represented students. CPC will include targeted events from the end of the 8th grade through the high school senior year for under-represented students and their parents. These targeted events would build upon each other so that each year these students would receive an on-campus university experience at critical transition points when students are progressing from junior high to high school or preparing to enroll at a college or university. During these activities, participants will be exposed to essential college preparation tools, coupled with "Come to Campus" family nights. The CPC will culminate with the "College Summer Summit" to help students enroll in college during their senior year of high school and eventually transition to the appropriate university program.

Westminster College -- Richard Garcia, Diversity & Global Learning, Start-up Grant
The Westminster College Access Summer Camp

The Westminster College Access Summer Camp provides middle school students from groups that have been historically under-represented in higher education with a three-day, two-night summer camp plus follow-up experiences at Westminster. Programs provide (1) knowledge about the college admissions and financial aid processes, (2) opportunities to strengthen subject area skills in Math, Writing, Arts, and Science/Technology, and (3) an understanding of steps necessary for transitioning to college through high school. Combined with educational course plotting and experiencing what it is like to "be" in college, middle school students learn communication and teamwork skills while working with college students throughout the camp.

The selection committee determined the following proposals be provisionally approved and funded based on resubmission of additional supporting evidence and support:

Dixie State College -- Rick Palmer, Office of Academic Advisement, Start-up Grant
College/Career Initiative

It is paramount to address the widening high school-to-college transitional gap and the lack of academic preparation of the low-income/under-represented student population residing within Washington County. The Office of Academic Advisement at Dixie State College of Utah (DSC), in collaboration with Washington County School District (WCSD), Dixie Applied Technology Center (DXATC) and other state/local agencies, is proposing a college/career initiative to establish a Student Success Center housed within the Office of Academic Advisement on the DSC campus. The Student Success Center staff will work collaboratively with WCSD, DXATC and state/local

agencies to develop a college/career transitional and academic preparedness program for all low-income/under-represented students.

Snow College -- Greg Dart, Office of Admission and Scholarships, Start-up Grant
Smart Choices
The Snow College Smart Choices program will target low-income and under-represented students in Central Utah. During the school year, students will attend workshops held at individual high schools. These workshops will provide students with study skills and college application assistance. Open houses will give students who are unsure about attending college the chance to tour a campus with their parents and participate in financial aid demonstrations. In the summer, two sessions of a week-long College Success Skills program will take place on the Snow College Campus. Students will live on campus, attend a college course, and receive college credit.

Weber State University -- Carl Porter, Academic Support Center/Programs, Expansion Grant
Connecting to College
The Connecting to College program would expand a current bridge program and focus on connecting low-income, first-generation, under-represented students to University services, staff, and peers through a series of events and one-on-one appointments. Monthly events would begin in May, when students graduate from high school, and end in November as they complete their first semester in college. Events build upon one another so that students successfully progress to college, enroll in classes, succeed in classes, and re-enroll for the subsequent semester. These events are designed to keep college a focus, instill that a college degree is attainable, and connect students with services, programs and staff that can increase their success. Selected events also have a parent component. Peer Advocates will provide one-on-one support through students' first semester.

University of Utah -- A.J. Metz, Department of Educational Psychology, Start-up Grant
College Access and Readiness Program
This proposal describes a partnership between the University of Utah and the AVID Program in the Granite School District and outlines a program designed to increase access to and success in higher education for student populations traditionally under-represented and underserved. Although parents play a significant role in shaping interests, attitudes, and behaviors associated with post-secondary education, many lack the knowledge and skills necessary to provide effective guidance in these important transitions. Therefore, this program provides information and resources to both students and their families on the benefits, opportunities, planning, and financing options available at institutions of higher education. Further, this program provides on-going support services necessary to ensure high school students are college and workforce ready.

The Office of Commissioner plans to disperse over $700,000 of its $1.5 million CACG funds in support of these institutions and programs over the next month. Subgrantees have the next calendar year to implement their program plans, and all funds must obligated by year end. Additionally, they must submit three quarterly reports, provide a site visit opportunity, and participate in the annual sharing meeting.

This federal grant is consistent with the Regents' strategic priority of increasing participation in higher education. It has been instrumental in helping the Utah System of Higher Education maintain capacity and momentum toward increasing academic and financial preparation so more Utah citizens might more fully participate in postsecondary education. The goals and activities outlined in the grant proposal will provide

our agency and partners a wonderful opportunity to build upon the work we have begun in recent years and be more intentional and collaborative in efforts over the next five years.

Commissioner's Recommendation

This is an information item only; no formal action by the Board is required. However, the Board is encouraged to read and take note of the information in this memorandum, and note that further follow-up will be handled by the Commissioner's Office as part of the Board's Participation strategic objective.

_____

William A. Sederburg
Commissioner of Higher Education

WAS/MMK

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Salt Lake Community College (SLCC) Campus Master Plan Update

Issue

In compliance with SBR Policy Salt Lake Community College has requested approval of its updated Campus Master Plan which was most recently approved by the Regents in January of 2010.

Background

The attached letter from the College provides summary information pertaining to the update of the SLCC Comprehensive Facilities Master Plan approved by the Board in January of 2010. The updates to the master plan that will be presented for Board approval are summarized in the attached letter from the College. The entire plan is available online for your review and can be accessed at http://www.slcc.edu/masterplan/index.html.

Since SLCC has multiple campus sites, a map showing the location of these sites, both existing and proposed, is attached for your information. College officials will be present at the meeting to provide additional detail and to respond to questions.

Commissioner's Recommendation

The Commissioner recommends the Regents approve Salt Lake Community College's updated campus master plan.

_____

William A. Sederburg
Commissioner of Higher Education

WAS/GLS/WRH
Attachments

Salt Lake Community College

January 7, 2011

Commissioner William Sederburg
Utah System of Higher Education
Board of Regents Building, The Gateway
60 South 400 West
Salt Lake City, Utah 84101-1284

Dear Commissioner Sederburg:

Re: Salt Lake Community College Comprehensive Facilities Master Plan Update

We appreciate the opportunity to host the Board of Regents meeting on January 22 at Salt Lake Community College. At that meeting we request the opportunity to present Salt Lake Community College's Comprehensive Facilities Master Plan, as updated, to the Board of Regents for approval.

The Board of Regents approved the SLCC Comprehensive Facilities Master Plan, prepared by AJC Architects and SRG Partnership, Inc., in its present form in 2009. The plan provides for periodic updates to reflect completed projects or changes to the plan required by changed demographics or updates to the College Strategic Plan.

We plan on presenting the information in a brochure that summarizes the changes made as a result of the updating process. The entire plan is available online for easy access. Following is a summary of the updates which have been proposed, with the assistance of AJC Architects, and reflected in the plan:

Demographics
- Population
- Enrollment
- Population Shifts

Revised Growth Recommendations

Site Closures
- Unity Center
- Sandy Center
- SLCC Space at Jordan Applied Technology Center

New Sites/Centers Added
- Highland Center
- Rose Park Center

Vice President of Business Services
4600 South Redwood Road · P.O. Box 30808 · Salt Lake City, Utah 84130-0808
Phone: (801) 957.4250 · Fax: (801) 957.4440 · www.slcc.edu

New Future Sites/Centers

- Accelerated schedule for the Southwest Quadrant—Herriman
- Southeast Quadrant—Sandy/Draper

Physical Facility Changes from 2008-2010

- Construction in process for the Center for New Media and Salt Lake City School District CTE Building at the South City Campus
- Design underway for the state-funded Instructional and Administration Building on the Taylorsville Redwood Campus
- Demolition of the Auto Trades Building at the Taylorsville Redwood Campus

Thank you for your ongoing support.

Sincerely,

Dennis R. Klaus
Vice President of Business Services

Salt Lake Community College

January 7, 2011

Commissioner William Sederburg
Utah System of Higher Education
Board of Regents Building, The Gateway
60 South 400 West
Salt Lake City, Utah 84101-1284

Dear Commissioner Sederburg:

Re: Salt Lake Community College Comprehensive Facilities Master Plan Update

We appreciate the opportunity to host the Board of Regents meeting on January 21, 2011 at Salt Lake Community College. At that meeting we request the opportunity to present Salt Lake Community College's Comprehensive Facilities Master Plan, as updated, to the Board of Regents for approval.

The Board of Regents approved the SLCC Comprehensive Facilities Master Plan, prepared by AJC Architects and SRG Partnership, Inc., in its present form in 2009. The plan provides for periodic updates to reflect completed projects or changes to the plan required by changed demographics or updates to the College Strategic Plan.

We plan on presenting the information in a brochure that summarizes the changes made as a result of the updating process. The entire plan is available online for easy access. Following is a summary of the updates which have been proposed, with the assistance of AJC Architects, and reflected in the plan:

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- Enrollment
- Population Shifts

Revised Growth Recommendations

Site Closures
- Unity Center
- Sandy Center
- SLCC Space at Jordan Applied Technology Center

New Sites/Centers Added
- Highland Center
- Rose Park Center

Vice President of Business Services
4600 South Redwood Road · P.O. Box 30808 · Salt Lake City, Utah 84130-0808
Phone: (801) 957.4250 · Fax: (801) 957.4440 · www.slcc.edu

New Future Sites/Centers

- Accelerated schedule for the Southwest Quadrant—Herriman
- Southeast Quadrant—Sandy/Draper

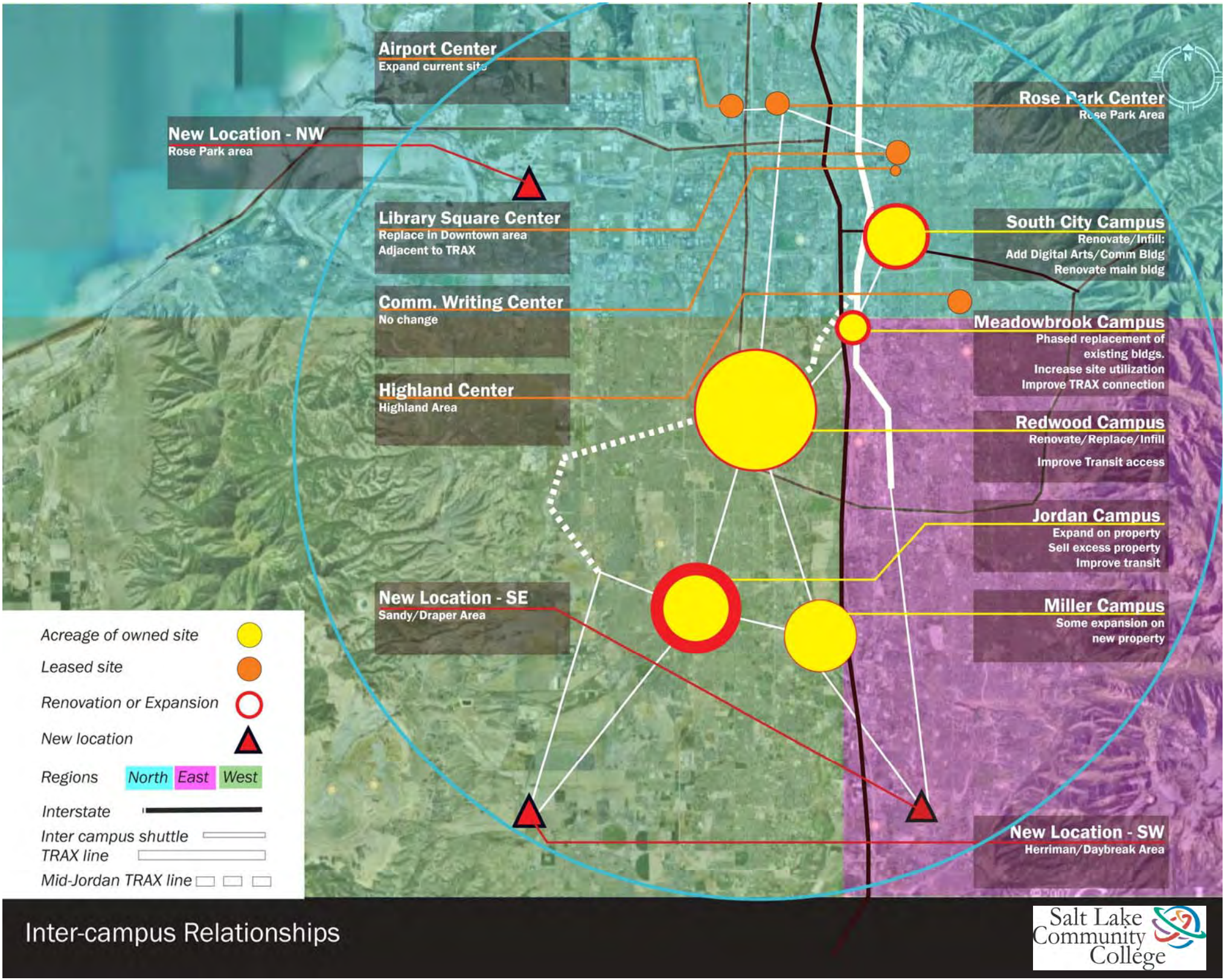
Physical Facility Changes from 2008-2010

- Construction in process for the Center for New Media and Salt Lake City School District CTE Building at the South City Campus
- Design underway for the state-funded Instructional and Administration Building on the Taylorsville Redwood Campus
- Demolition of the Auto Trades Building at the Taylorsville Redwood Campus

Thank you for your ongoing support.

Sincerely,

Dennis R. Klaus
Vice President of Business Services



Inter-campus Relationships

Salt Lake Community College

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Salt Lake Community College (SLCC) -- Herriman Land Bank Property Request

Issue

Salt Lake Community College is requesting Board approval to substitute a new property in place of the future Herriman branch campus property that was previously approved as a "land-bank" request by Regents September 8, 2010.

Background

The property previously approved was viewed as a very desirable location for a future branch campus in the southeast quadrant of Salt Lake County. However, some concern was expressed about the cost of the land, and the College was encouraged to continue negotiations for a lower price and/or look for other less costly property options. Several subsequent meetings with the developer were unsuccessful in reducing the cost of the property, leading to exploration of other land possibilities in Herriman.

The College, working with the City of Herriman and the Sorenson Foundation/Real Estate Committee, found a 90-acre parcel three miles south of the original property. Numerous meetings with the Sorenson Foundation resulted in a $10 million reduction from the price of the originally approved property. This new property consists of 90 acres of prime land contiguous to commercial/industrial space and a future middle and high school, with road and utility infrastructure provided by Sorenson. Both the Mayor of Herriman and the Sorenson Foundation have assured the College that if the branch campus is located on the Sorenson land, a TRAX line hub will be located there. The timeline is not yet clear, but assurances from UTA are that, at the very least, a bus rapid transit (BRT) line and hub will be located at the site until the TRAX line is complete. The property is also adjacent to proposed Mountain View Corridor highway project.

The offered price of the property is $9.9 million for 60 acres with the remaining 30 acres to be donated by the Sorenson Foundation. This is a $10 million reduction from the price of the originally approved property. The City of Herriman and SLCC's private wind industry partner prefer the Sorenson land site over the previously approved property. A map showing the location of both the previously approved property (site A) and the new proposed property (site B) are attached. Representatives of the College will be present to answer any questions.

Commissioner's Recommendation

The Commissioner recommends approval of this property as a replacement for the land-bank property request previously approved.

William A. Sederburg
Commissioner of Higher Education

WAS/GLS/WRH
Attachments

Salt Lake Community College

Herriman Campus Aerial Map

N

ajc architects

703 east 1700 south
salt lake city, utah 84105
ph: 801.466.8818
fx: 801.466.4411
ajc@ajcarchitects.com

CORRECTED COPY

Tab H

UTAH SYSTEM OF HIGHER EDUCATION
Building a Stronger State of Minds℠

State Board of Regents
Board of Regents Building, The Gateway
60 South 400 West
Salt Lake City, Utah 84101-1284

Phone 801.321.7101
Fax 801.321.7199
TDD 801.321.7130
www.higheredutah.org

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Utah State University Athletics Competition and Practice Facility

Issue

Utah State University has requested inclusion of a new Athletics Competitive/Practice Facility on the USHE Non-state Funded Capital Development Request for FY 2011-12. The facility is estimated to cost $7.5 million to be provided from donated funds and will have approximately 28,000 square feet of space.

The approval process requires that, in addition to Regents' approval, the State Building Board and the Legislature must also authorize the planning, design, and construction of the facility. USU has placed this item on the Building Board agenda for their meeting scheduled on January 5, 2011. While this project request comes outside the normal calendar for consideration, the University requests that the Regents review it now, in order that – with Regent approval – the project may be forwarded to the 2011 Legislative Session for consideration as a Non-State Funded Capital Development Request.

Background

The requested facility will be located west of the Spectrum and will function as practice facility for basketball and volleyball and as a venue for volleyball competition. It may also include basketball and volleyball offices, meeting spaces, training rooms, small locker rooms, and ticket/concessions areas. This facility will likely include some education and general space which, under current Board policy, would qualify for state-appropriated O&M support.

Specifically, the University is seeking Regents approval to commence programming and design immediately and to authorize them to seek state-appropriated O&M support for any eligible spaces at the appropriate time in the future.

Commissioner's Recommendation

The Commissioner recommends approval of this addition to the USHE Non-State Funded Capital Development Request for FY2011-12 with the understanding that the University must bring the issue of future state-appropriated O&M funds to the Regents for ratification once programming and design are completed and prior to the commencement of construction.

William A. Sederburg
Commissioner of Higher Education

WAS/GLS/WRH
Attachments

UtahState University
VICE PRESIDENT FOR BUSINESS AND FINANCE

21 December 2010

Commissioner William A. Sederburg
Utah System of Higher Education
Board of Regents Building
The Gateway
60 South 400 West
Salt Lake City, UT 84101-1284

Dear Commissioner Sederburg:

SUBJECT: Non-State Funded Athletics Competitive/Practice Facility Approval

Utah State University desires to construct a new Athletics Competitive/Practice Facility near the Spectrum. The facility is expected to be funded through private donations at an estimated cost of $7.5 million. The building will function as a practice facility for basketball and volleyball and as a venue for volleyball competitions. The facility may also include basketball and volleyball offices, meeting spaces, training rooms, small locker rooms, and ticket/concessions areas. State O&M funding for the eligible E&G space in the facility will be requested at the appropriate time.

We request that this project be placed on the agenda for the next Board of Regents meeting to receive approval to be added to the Non-State Funded Capital Development Request for FY2011-12 and then forwarded to the 2011 Legislature. Approval of the project is anticipated by the USU Board of Trustees in its 7 January 2011 meeting.

Your consideration of this request is appreciated.

Sincerely,

David T. Cowley
Vice President for
Business and Finance

DTC/jm

c: Gregory L. Stauffer
Darrell E. Hart

1445 Old Main Hill Logan, UT 84322-1445 Ph: (435) 797-1146 Fax: (435) 797-0710 www.usu.edu/vpbus

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Revision to Regent Policy R601 – Board of Directors of the Utah Higher Education Assistance Authority (UHEAA)

Issue

As UHEAA advances toward becoming an active Federal student loan servicer, it will be necessary to document UHEAA specific governing policies detailing how UHEAA complies with Federal contract requirements. These UHEAA required modifications are not necessarily required or recommended for compliance by the Office of the Commissioner.

The existing Regent Policy R601 does not document specific delegation of authority to the UHEAA Board of Directors to approve and implement policies specific to UHEAA. Possible areas to be included in such policies will include the following:

- Information Security
- Information Technology
- Human Resources
- Operations
- Record Keeping and Records Management
- Physical Security

Commissioner's Recommendation

The Commissioner recommends approval of recommended changes to Policy R601 Section 3.3 – Authorized Responsibilities and Functions, as documented in the attachment.

William A. Sederburg
Commissioner of Higher Education

WAS/DAF/SSD
Attachments

STATE OF UTAH

OFFICE OF THE ATTORNEY GENERAL

MARK L. SHURTLEFF
ATTORNEY GENERAL

JOHN E. SWALLOW
Chief Deputy

Protecting Utah • Protecting You

KIRK TORGENSEN
Chief Deputy

January 12, 2011

David A. Feitz
Executive Director
UHEAA
Two Gateway Office Center
PO Box 145112
Salt Lake City UT 84114-5112

RE: Regents Policy R601

Dear David:

You have inquired about whether additional clarification in policy R601 would be useful or necessary as UHEAA moves forward in a variety of business endeavors, including as a servicer of student loans under contract with the U.S. Department of Education (ED). Statue grants to UHEAA specific authority to guarantee student loans, to enter into contracts with educational institutions and lenders, to participate in federal student loan programs (including specifically "programs guaranteeing, reinsuring, or otherwise supporting loans to borrowers"), and to adopt rules to govern all UHEAA activities. This authority of UHEAA is generally found at sec. 53B-12-101 et seq. Utah Code Annotated.

You have provided a proposed revision to policy R601. The revisions set forth a number of areas where UHEAA may need to have specifically documented authority as it contemplates agreements for services to be provided under potential contracts with ED and others for the servicing of student loans. Recently we have dealt with contract matters for institutions of higher education where the contracting party has required very specific authorization for the transaction and even the authority of the person executing the agreement on behalf of the Regents. Our experience is that it is far better to anticipate the need and have authority clearly set forth in policy, rather than seek an "emergency" policy statement after the issue has been raised by the contracting party. This may be very important as we work toward agreements for the servicing of student loans on behalf of ED.

UHEAA has specific authority to adopt and amend rules and policies. This more detailed policy should serve to facilitate the expanded work of UHEAA and the negotiation and execution of agreements with ED. The proposed changes appear to reflect clarification, rather than expansion of authority under statute and current policy R601.

Please let me know if you need further assistance in this regard.

Sincerely,

THOMAS C. ANDERSON
Assistant Attorney General

TCA/da
cc: David Jones

P.O. BOX 140853 • SALT LAKE CITY, UTAH 84114-0853 • TEL: (801) 366-0270 • FAX: (801) 366-0268

R601, Board of Directors of the Utah Higher Education Assistance Authority[1]

R601-1. Purpose: To provide for a subsidiary Board of Directors for the Utah Higher Education Assistance Authority (UHEAA), the members of which are appointed by and serve at the pleasure of the Board of Regents, to exercise delegated responsibility for oversight and governance of the student financial aid programs on behalf of the Board of Regents.

R601-2. References

2.1. Utah Code Title 53B, Chapter 12 (Higher Education Assistance Authority) Chapter 12 designates the State Board of Regents to constitute the Utah Higher Education Assistance Authority (UHEAA), and in that capacity grants to it the general authorities for operation of student aid programs and to enter into agreements with the Federal Government, in particular with reference to the operation of a student loan guarantee program and related functions.

2.2. Utah Code Title 53B, Chapter 8a (Higher Education Savings Incentive Program) designates the Board of Regents acting in its capacity as the Utah Higher Education Assistance Authority to be the board of directors of the Utah Educational Savings Plan Trust.

2.3. Utah Code Title 53B, Chapter 11 (Student Loan Program) Chapter 11 grants to the Board of Regents several authorities related to operation of student loan programs.

2.4. Utah Code Title 53B, Chapter 13 (Higher Education Loan Act) Chapter 13 provides specific authorities for the Board of Regents to issue student loan revenue bonds, and to make and purchase student loans. The Board operates its Loan Purchase Program under this authority, whereby it purchases Federal Family Education Loan Program (FFELP) student and parent loans guaranteed by UHEAA, originates FFELP Consolidation Loans, and may as necessary directly originate student and parent loans.

2.5. Utah Code Title 53B, Chapter 13a (Utah Centennial Opportunity Program for Education Act) Chapter 13a establishes the Utah Centennial Opportunity Program for Education (UCOPE), to provide state-supported need-based grants and work-study stipends for Utah residents attending Utah postsecondary institutions, and designates the Board of Regents as the governing authority for UCOPE.

2.6. Utah Code Title 53B, Chapter 7, Part 5 (Higher Education Tuition Assistance Program). Chapter 7, Part 5 establishes a program of need-based grants to higher education students at community colleges, branch campuses, and centers of the Utah System of Higher Education.

2.7. Utah Code 53B-6-105.7 (Engineering, Computer Science, and Related Technology Scholarship Program). Utah Code 53B-6-105.7 establishes within the Engineering and Technology Initiative the Engineering, Computer Science, and Related Technology Scholarship Program to recruit, retain and train engineering, computer science, and related technology students.

2.8. Utah Code Title 53B, Chapter 10 (Terrel H. Bell Teaching Incentive Loans Program) to recruit outstanding students to teach in prioritized critical areas of need in Utah's public schools, as defined by the Utah State Office of Education's criticality index, and to recognize teaching as a positive career choice.

[1] Adopted December 14, 1982, amended July 12, 1985, July 11, 1986, June 19, 1987, April 26, 1991, July 17, 1992, November 5, 1993, December 15, 1995, August 1, 1996, May 29, 1998, October 16, 1998, April 20, 2001, and March 27, 2009. Renumbered from R610 to R601 December 2002.

2.9. Utah Code 52B-8-105, (The New Century Scholarship Program) a scholarship which is awarded to Utah high school graduates who either complete the requirements for an associate degree with at least a "B" (3.0) grade point average prior to September 1 of the same year they would normally graduate with their high school class, or who complete a rigorous math and science curriculum approved by the State Board of Regents with at least a "B" (3.0) grade point average.

2.10. Utah Code 53B-8-108 et seq. (Regents' Scholarship Program) to encourage all Utah high school students to take a rigorous high school curriculum that will successfully prepare them for postsecondary education and the demands of the modern workforce; to provide incentives for all Utah high school students to prepare academically and financially for postsecondary education; to motivate high school students to work hard through the senior year; to increase the numbers of Pell Grant-eligible students qualifying for federal Academic Competitiveness Grants; and to increase the numbers of Utahans enrolling in Utah colleges and universities.

2.11. Policy and Procedure R615, UHEAA Grant: The UHEAA Grant is a need-based grant awarded to qualified students who have demonstrated substantial financial need and are making satisfactory academic progress, as defined by the institution. It can be awarded as part of an institutional packaging of need-based aid or emergency awards for students experiencing unanticipated personal or family financial difficulties.

2.12. Policy and Procedure R616, Minority Scholarships: Legislative supplemental appropriations provide scholarships to Utah resident minority students attending a USHE institution. The scholarships are designed to increase the participation levels of minority students in postsecondary education.

R601-3. Policy

3.1. Create a Subsidiary Board: The Utah State Board of Regents (Board of Regents), in its statutory authority as the Utah Higher Education Assistance Authority (UHEAA), as authorized by the State Legislature (Utah Code §53B-12-102), hereby creates a subsidiary Board of Directors for UHEAA (UHEAA Board), the members of which are appointed by the Chair of the Board of Regents and serve at the pleasure of the Board of Regents. The volume of outstanding student loans guaranteed by UHEAA and loans owned by the Board of Regents, together with the scope of responsibilities involved in administration of the Utah Educational Savings Plan Trust and the other financial aid programs, require more continuous and intensive policy and operational oversight than reasonably can be given by the Board of Regents. In addition, consolidated administrative and oversight responsibility for all student financial aid programs under the organizational name of UHEAA can foster most effective coordination and communication with institutions of postsecondary education, and with lenders participating in the student loan programs.

3.2. Subsidiary Board Established: The Board of Regents, through the Commissioner of Higher Education, assigns administrative and operational responsibility for all student financial aid programs, including college savings programs, to a division of the Office of the Commissioner of Higher Education, and hereby assigns oversight and governance responsibilities for such programs (except functions specifically reserved for direct action by the Board of Regents) to the UHEAA Board of Directors.

3.3. Authorized Responsibilities and Functions: The appointed UHEAA Board of Directors is authorized to exercise only the UHEAA responsibilities and functions of the Board of Regents which are expressly delegated to it by the Board of Regents, and the Board of Regents retains the power to reassume for itself those responsibilities and functions, in whole or part, at any time. Responsibilities and functions delegated to the UHEAA Board of Directors include those which are statutorily assigned to the Board of Regents in its capacity as the governing body of UHEAA and those for other student financial aid program functions of the Board of Regents. The Board of Regents further delegates to the UHEAA Board of Directors the authority

to approve and implement UHEAA specific policies needed to operate and manage the unique needs of the UHEAA organization that may be more restrictive than those otherwise required by the Board of Regents for purposes of assuring compliance with Federal contracting requirements including:

- Information Security
- Information Technology
- Human Resources
- Operations
- Record keeping and record management
- Physical Security

3.4. UHEAA Board to Report to and Serve at the Pleasure of the Board of Regents: The UHEAA Board of Directors shall report to and serve at the pleasure of the Board of Regents, and shall have the specific duty and obligation to provide the entire Board of Regents with complete and timely information as to all of its activities, decisions, policies, and recommendations.

3.5. Membership, Method of Appointment and Terms of UHEAA Board

3.5.1. Officers and members of the UHEAA Board of Directors serving as of March 19, 2009 shall continue to serve through June 30, 2009.

3.5.2. Effective July 1, 2009, the UHEAA Board of Directors shall consist of fifteen members, four of whom shall be members by virtue of their other offices, and eleven of whom shall be appointed by the Chair of the Board of Regents, as follows:

3.5.2.1. The Chair of the Board of Regents Finance and Facilities Committee, the Commissioner of Higher Education, the Associate Commissioner for Finance and Facilities, and the Associate Commissioner for Student Financial Aid shall be members ex officio, with vote.

3.5.2.2. The Chair of the Board of Regents shall appoint eleven members who are residents of Utah, with the following qualifications—(a) three shall be members of the Board of Regents; (b) three shall be senior-level administrators in Utah institutions of postsecondary education, with experience in business affairs or general administration; (c) four shall be citizen members with special expertise in finance, student financial aid, government or public administration, and (d) one shall be a student currently enrolled in a Utah institution of postsecondary education, who will serve without vote. The appointed members shall serve until replaced by appointment of a successor by the Chair of the Board of Regents. When any appointed member resigns, ceases to be a resident of Utah, or ceases to hold the office on the basis of which the member was appointed (if applicable), the Chair of the Board of Regents shall appoint a replacement with comparable qualifications to fill the member's unexpired term.

3.6. Powers, Duties, and Responsibilities of the UHEAA Board

3.6.1. The UHEAA Board of Directors is authorized to exercise on behalf of the Board of Regents all of the powers, duties, and responsibilities of the Utah Higher Education Assistance Authority, including the administration of the student loan guarantee program under Utah Code Title 53B, Chapter 12, and the Utah Educational Savings Plan Trust under Utah Code Title 53B, Chapter 8a. This delegation includes authority for strategic planning, approval of budgets, and adoption of program policies and administrative rules.

3.6.2. In addition, the UHEAA Board of Directors is authorized to govern on behalf of the Board of Regents, including strategic planning and adoption of budgets for

3.6.2.1. The State Board of Regents Loan Purchase Program (secondary market for and origination of student loans), except that the Board of Regents as required by statute reserves to itself all powers and responsibilities which specifically relate to the approval and execution of bond resolutions, notes, certificates, or other documentation for the incurring of indebtedness to fund the purchase or origination of student and parent loans;

3.6.2.2. The Utah Centennial Opportunity Program for Education (UCOPE) under Utah Code Title 53B, Chapter 13a;

3.6.2.3. The Higher Education Tuition Assistance Program under Utah Code Title 53B, Chapter 7 Part 5;

3.6.2.4. The Utah Engineering, Computer Science, and Related Technology Scholarship Program under Utah Code 53B-6-105.7;

3.6.2.5. UHEAA Grant program, R615, UHEAA Grant; and

3.6.2.6. Minority Scholarships, R616, Minority Scholarships.

3.6.3. The UHEAA Board is authorized to provide operational support services for:

3.6.3.1. The Terrel H. Bell Teaching Incentive Loans Program Utah Code Title 53B, Chapter 10;

3.6.3.2. The New Century Scholarship Program Utah Code 52B-8-105; and

3.6.3.3. The Regents' Scholarship Program Utah Code 53B-8-108 through 111.

3.6.4. The UHEAA Board of Directors shall perform the same functions for the Student Loan Guarantee Program, the Loan Purchase Program, the Utah Educational Savings Plan Trust, and the Higher Education Tuition Assistance Program that are performed under the Utah Money Management Act by Boards of Trustees of institutions of the Utah System of Higher Education, and shall establish a Student Finance Subcommittee from its membership, which shall be directly responsible, reporting directly to the Board of Regents through its Finance and Facilities Committee, for oversight and advice regarding bond issues and other financing arrangements for the Loan Purchase Program.

3.6.5. The Board of Directors shall adopt its own bylaws and determine its own procedures.

3.7. Staff Support: Staff support for the Board of Directors shall be provided by the Associate Commissioner for Student Financial Aid.

3.8. Frequency of Meetings, Per Diem and Travel Expenses: The Board of Directors shall meet as it may determine to be necessary in order to fulfill its responsibilities. Board members who are not higher education or state government employees shall receive per diem for meeting days at the same rate and under the same criteria as per diem paid to Regents. Members other than employees of the Office of the Commissioner of Higher Education (OCHE) shall receive reimbursement for travel to meeting locations in

accordance with Board of Regents travel reimbursement policies. Per diem and travel expenses for Board members shall be paid from Loan Purchase Program administrative funds. Travel expenses for members who are employees of the Office of the Commissioner of Higher Education shall receive travel expenses for travel to meeting locations other than the Board of Regents office, reimbursed by the appropriate OCHE cost center(s).

3.9. Periodic Reports to the Board of Regents -The Board of Directors shall provide periodic reports through the Finance and Facilities Committee on matters for which it is responsible, including strategic developments and considerations affecting the student financial aid programs. Also, the Board of Directors shall forward strategic issues for Board of Regents consideration either on its own initiative or as requested by the Chair of the Board of Regents.

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: USHE – Report of Auxiliary Funds

Background

The Board of Regents requests an annual update of auxiliary operations within the Utah System of Higher Education (USHE).

Issue

Auxiliary enterprises are business activities or other support activities, as distinguished from primary programs of instruction, research, public service, and from intercollegiate athletics. Policy R550 requires institutions to provide a report of specified services to students, faculty, staff, or guests of the institution. All institutional housing, food service, and college store activities are to be classified and managed as auxiliary enterprises.

Annually, USHE institutions provide reports of auxiliary enterprise activity. This information has been consolidated by OCHE staff for the purpose of Regent review (see attachment). Auxiliary operations are examined by independent auditors during the annual financial statement audits.

In reviewing the auxiliary enterprises reports submitted by the institutions, no material financial concerns were evident with the exception of a deficit fund balance at USU-CEU (see Report of Auxiliary Enterprise Operations 2009-2010 Actuals). However, it is important to note that this issue has been addressed as part of the USU/CEU merger. Should there be questions regarding the auxiliary enterprise reports, representatives of the institutions should be available to supply explanations.

Commissioner's Recommendation

This is an information item only. No action is required.

_____

William A. Sederburg
Commissioner of Higher Education

WAS/GLS/PM
Attachments

UTAH SYSTEM OF HIGHER EDUCATION

Report of Auxiliary Enterprise Operations (2009-10 Actuals)

	UU	USU	WSU	SUU	SNOW	DSC	USU - CEU	UVU	SLCC
Beg Fund Balance**	$ 300,000	$ 589,184	$ 3,662,852	$ 2,397,403	$ 909,779	$ 1,420,643	$ (198,142) *	$ 3,434,722	$ 2,175,257 *
Revenues	77,092,000	35,049,841	18,361,818	8,522,214	2,365,354	6,489,174	3,027,817	16,892,770	15,911,338
Expenditures	(74,593,000)	(30,257,294)	(16,599,026)	(5,952,989)	(2,359,476)	(5,777,765)	(3,018,988)	(16,291,000)	(15,129,598)
Net Income	2,499,000	4,792,547	1,762,792	2,569,225	5,878	711,409	8,829	601,770	781,740
Transfers	(2,198,000)	(4,767,899)	(1,380,080)	(2,845,265)	-	(105,020)	(45,000)	(601,770)	(215,000)
Change in F/B	301,000	24,648	382,712	(276,040)	5,878	606,389	(36,171)	-	566,740
End Fund Balance	$ 601,000	$ 613,832	$ 4,045,564	$ 2,121,363	$ 915,657	$ 2,027,032	$ (234,313)	$ 3,434,722	$ 2,741,997
End Fund Bal to Rev	0.78%	1.75%	22.03%	24.89%	38.71%	31.24%	N/A	20.33%	17.23%
End Fund Bal to Exp	0.81%	2.03%	24.37%	35.64%	38.81%	35.08%	N/A	21.08%	18.12%

* CEU's beginning auxiliary fund balance has been increased by $130,901. Because CEU's annual audit is completed after this report is presented to Regents, this update is necessary to accuraely report CEU's beginning auxiliary fund balance.

* SLCC's beginning auxiliary fund balance was reduced by $239,402. The change was the result of an error on the FY 09 report.

** It should be noted that the Fund Balance includes cash, inventories, etc. related to running/maintaining Auxiliary Enterprise Operations.

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: USHE - Annual Report of Institutional Revenue Bond Indebtedness

Issue

In compliance with Regents' policy R590, *Issuance of Revenue Bonds for Facilities Construction or Equipment,* the annual report of USHE Institutional Revenue Bond Indebtedness is attached for your information and review. The report summarizes all USHE revenue bonds that were outstanding on June 30, 2010. All bonds have been through the process of Legislative authorization and Regents' approval as required by State statutes and Regents' policies, (Note that while legislative authorization is required prior to initial bond issuance, the Board of Regents is authorized to proceed with refunding of existing bonds without additional legislative action.)

All bonds covered in the report are being retired on schedule with debt service coverage requirements being met or exceeded in every case.

Commissioner's Recommendation

This is an information item only; no action is required.

_____
William A. Sederburg
Commissioner of Higher Education

WAS/GLS/WRH
Attachments

Utah System of Higher Education

Outstanding University & College Revenue Bonds

Fiscal Year 2010

University or College Bond/Bond System	Original Amount	Series	Purpose	Debt Service Coverage Requirement*	Debt Service Coverage as of 30-Jun-10	Maturity Date	Outstanding Balance as of 30-Jun-10
University of Utah							
Aux. & Campus Fac.	$ 11,140,000	1987A	Aux & Campus Fac Revenue Refunding	1	2.24	2014	$ 565,000
	52,590,000	1997A	Aux & Campus Fac Sys Rev (variable) - Stadium	1	2.24	2027	6,000,000
	120,240,000	1998A	Aux & Campus Fac Sys Rev Refunding - Housing	1	2.24	2016	30,365,000
	42,955,000	2005A	Aux & Campus Fac Sys Rev Refunding	1.0	2.24	2020	36,865,000
	23,515,000	2010A	Aux & Campus Fac Revenue Refunding	1.0	2.24	2024	23,515,000
Subtotal	$ 250,440,000						$ 97,310,000
Hospital Facilities	30,480,000	2005A	Hospital Rev Refunding	1.1	10.5	2018	27,350,000
	77,145,000	2006A	Hospital Rev Refund. - Hospital Expansion	1.1	10.5	2031	77,145,000
	20,640,000	2008	Hospital Revenue Refunding (variable)	1.1	10.5	2031	20,120,000
	9,135,000	2009A	Hosp. Revenue - UNI expansion (nontaxable)	1.1	10.5	2016	9,135,000
	41,785,000	2009B	Hosp. Revenue - UNI expansion (taxable)	1.1	10.5	2030	41,785,000
Subtotal	$ 179,185,000						$ 175,535,000
Research Facilities	9,685,000	2004A	Research Facilities Rev - Med. Research Renovation	2.5	8.50	2019	6,410,000
	5,515,000	2005A	Research Facilities Rev (Moran Eye Center)	2.5	8.50	2025	4,520,000
	20,130,000	2005B	Research Facilities Rev Refunding	2.5	8.50	2020	12,920,000
	9,360,000	2008A	Research Facilities Rev - NPS Bldg	2.5	8.50	2022	8,320,000
	19,080,000	2009A	Research Facilities Rev - N. Campus Infra. (nontaxable)	2.5	8.50	2019	16,815,000
	27,730,000	2009B	Research Facilities Rev - N. Campus Infra. (taxable)	2.5	8.50	2029	27,730,000
Subtotal	$ 91,500,000						$ 76,715,000
Cert. of Participation	42,450,000	2007	Refund Viron Lease & Co-gen Project	N/A	N/A	2026	38,010,000
UU Total	$ 563,575,000						$ 387,570,000
Utah State University							
Student Housing	$ 39,155,000	2007	Student Fee & Housing Sys Ref Rev	1.1	1.54	2035	$ 39,155,000
Student Housing	8,130,000	2009	Student Fee & Housing Sys Rev Ref	1.1	1.54	2015	8,020,000
Research Facilities	23,735,000	2002A	Research and Ref Rev	2.5	6.89	2018	15,960,000
Research Facilities	705,000	2003A	Research Revenue Bonds	2.5	6.89	2016	367,000
Research Facilities	22,000,000	2009	Research Revenue Bonds	2.5	6.89	2031	21,865,000
Student Building Fee	11,065,000	2004A	Student Building Fee Ref Rev	1.1	1.46	2026	9,230,000
USU Total	$ 104,790,000						$ 94,597,000

University or College Bond/Bond System	Original Amount	Series	Purpose	Debt Service Coverage Requirement*	Debt Service Coverage as of 30-Jun-10	Maturity Date	Outstanding Balance as of 30-Jun-10
WSU							
Student Facilities Sys	$ 12,280,000	2001A	Student Facilities Sys Rev	1.25	1.64	2012	$ 585,000
Student Facilities Sys	22,810,000	2005	Student Facilities Sys Rev	1.25	1.64	2032	22,500,000
Student Facilities Sys	10,155,000	2007	Student Facilities Sys Rev Ref	1.25	1.64	2031	10,065,000
WSU Total	$ 45,245,000						$ 33,150,000
SUU							
Student Building Fee	$ 4,540,000	2002A	Student Building Fee/Refunding Rev	1.15	1.28	2014	2,320,000
Student Building Fee	10,060,000	2003	Student Building Fee/Refunding Rev	1.15	1.28	2023	8,520,000
Aux. System & Student Bldg.	12,025,000	2008	Auxiliary System & Student Bldg. Fee Rev	1.15	1.28	2033	11,720,000
SUU Total	$ 26,625,000						$ 22,560,000
Snow College	No revenue bonds outstanding on June 30, 2010						
Dixie State College							
Dixie Center	$ 5,195,000		Dixie Center Lease Rev Ref	N/A	N/A	2023	$ 4,450,000
DSC Total	$ 5,195,000						$ 4,450,000
Utah Valley University							
Unified System Revenue	$ 11,020,000	2004A	Student Ctr Build Fee/Unified Sys Rev Ref	1.1	1.54	2020	$ 5,750,000
Unified System Revenue	4,035,000	2004B	Student Ctr Build Fee/Unified Sys Rev Ref	1.1	1.54	2011	630,000
Lease Revenue	3,900,000	2004A	MBA Utah County/Lease Rev	1.1	1.54	2019	2,930,000
Lease Revenue	2,600,000	2004B	MBA Utah County/Lease Rev Taxable	1.1	1.54	2014	1,300,000
UVU Total	$ 21,555,000						$ 10,610,000
Salt Lake Community College							
Aux. System & Student Fee	$ 7,925,000	2010	Auxiliary System and Student Fee Revenue Refunding Bonds	1.25	3.71	2016	$ 6,935,000
SLCC Total	$ 7,925,000						$ 6,935,000
USHE Total	$ 774,910,000						$ 559,872,000

* "Rate Covenant" and "Additional Bonds" Tests

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: USHE – Annual Contract and Grant Report

The attached report is provided in compliance with Board Policy R532 pertaining to contract and grant approval and reporting that requires institutions to submit annual reports summarizing the number and dollar amounts of awards received during the previous fiscal year.

This year's report is anomalous in that, in addition to the routine reporting categories, it also includes the category of American Recovery and Reinvestment Act (ARRA) funds that are separate from the "State Fiscal Stabilization Fund" Program. These funds were made available to institutions of higher education on a competitive proposal basis through various federal agencies (NIH, NSF, etc.) USHE institutions, primarily the research universities, have been successful in receiving contract and grant awards totaling $5.4 million in FY 2009 and $68.7 million in FY 2010.

Since these funds are restricted to specific proposals submitted and are primarily research in nature, they are not available to offset the loss of state appropriated funds in the Education and General budgets of the institutions. They do, however, represent a significant contribution in mitigating the overall negative impact of the recession in the state and in moving the economy back to normalcy. The opportunity to seek these funds will disappear when the funds set aside for this purpose are depleted.

It is noteworthy that independent of the ARRA funds, total contract and grant activity in USHE institutions increased 14.8% over the prior fiscal year. When ARRA funds are included, the increase was 27.0%. The attached report summarizes the activity of each institution for fiscal years 2009 and 2010.

Commissioner's Recommendation

This is an information Item only; No action is required

William A. Sederburg
Commissioner of Higher Education

WAS/GLS/WRH
Attachment

Utah System of Higher Education
Contracts and Grants Report

Institution	Fiscal Year 2009		Fiscal Year 2010		% Change	
	No.	Total $ Amount	No.	Total $ Amount	No.	Amount
University of Utah						
Research	1,515	248,074,195	1,542	$276,462,046	1.8%	11.4%
Instruction	161	34,625,526	173	29,979,510	7.5%	-13.4%
Clinical	162	21,288,871	175	45,903,145	8.0%	115.6%
Other	316	46,601,601	336	42,659,574	6.3%	-8.5%
Subtotal - UU	2,154	350,590,193	2,226	395,004,275	3.3%	12.7%
ARRA Non-stabilation Funds	12	4,068,985	204	55,610,724	1600.0%	1266.7%
TOTAL UU	2,166	354,659,178	2,430	450,614,999	12.2%	27.1%
Utah State University						
Research	763	95,264,190	857	$114,293,505	12.3%	20.0%
Instruction	51	4,927,696	55	3,107,965	7.8%	-36.9%
Clinical	0		0	0		
Other	327	21,978,658	311	26,468,562	-4.9%	20.4%
Subtotal - USU	1,141	122,170,544	1,223	143,870,032	7.2%	17.8%
ARRA Non-stabilation Funds	12	1,287,789	37	10,975,314	208.3%	752.3%
TOTAL USU	1,153	123,458,333	1,260	154,845,346	9.3%	25.4%
Weber State University						
Research	5	142,771	34	$1,543,232	580.0%	980.9%
Instruction	9	992,652	10	1,438,743	11.1%	44.9%
Clinical						
Other	34	3,620,737	65	5,464,964	91.2%	50.9%
Subtotal - WSU	48	4,756,160	109	8,446,939	127.1%	77.6%
ARRA Non-stabilation Funds			1	142,213	100.0%	100.0%
TOTAL WSU	48	4,756,160	110	8,589,152	129.2%	80.6%
Southern Utah University						
Research	5	34,543	1	$2,000	-80.0%	-94.2%
Instruction	10	400,312	6	282,522	-40.0%	-29.4%
Clinical						
Other	44	5,763,739	49	6,355,082	11.4%	10.3%
Subtotal - SUU	59	6,198,594	56	6,639,604	-5.1%	7.1%
ARRA Non-stabilation Funds			5	306,897	100.0%	100.0%
TOTAL SUU	59	6,198,594	61	6,946,501	3.4%	12.1%
Dixie State College						
Research	3	87,195	3	$123,720	0.0%	41.9%
Instruction						
Clinical						
Other	28	1,412,855	28	1,657,659	0.0%	17.3%
Subtotal - DSC	31	1,500,050	31	1,781,379	0.0%	18.8%
ARRA Non-stabilation Funds			1	12,363	100.0%	100.0%
TOTAL DSC	31	1,500,050	32	1,793,742	3.2%	19.6%

Utah System of Higher Education Contracts and Grants Report						
	Fiscal Year 2009		Fiscal Year 2010		% Change	
Institution	No.	Total $ Amount	No.	Total $ Amount	No.	Amount
Utah Valley University						
Research	1	30,000	7	$1,495,095	600.0%	4883.7%
Instruction	11	5,959,391	3	1,377,542	-72.7%	-76.9%
Clinical	2	362,985	0	0	-100.0%	-100.0%
Other	134	619,831	19	1,400,115	-85.8%	125.9%
Subtotal - UVU	148	6,972,207	29	4,272,752	-80.4%	-38.7%
ARRA Non-stabilation Funds						
TOTAL UVU	148	6,972,207	29	4,272,752	-80.4%	-38.7%
Snow College						
Research						
Instruction						
Clinical						
Other	1	40,000	13	6,463,751	1200.0%	16059.4%
Subtotal - Snow	1	40,000	13	6,463,751	1200.0%	16059.4%
ARRA Non-stabilation Funds						
TOTAL Snow	1	40,000	13	6,463,751	1200.0%	16059.4%
College of Eastern Utah						
Research			0	-		
Instruction			0	-		
Clinical			0	-		
Other	24	4,634,392	21	2,931,782	-12.5%	-36.7%
Subtotal - CEU	24	4,634,392	21	2,931,782	-12.5%	-36.7%
ARRA Non-stabilation Funds			1	39,622	100.0%	100.0%
TOTAL CEU	24	4,634,392	22	2,971,404	-8.3%	-35.9%
Salt Lake Community College						
Research						
Instruction	25	4,887,557	16	$6,701,380	-36.0%	37.1%
Clinical						
Other	18	3,539,061	18	$3,722,066	0.0%	5.2%
Subtotal - SLCC	43	8,426,618	34	10,423,446	-20.9%	23.7%
ARRA Non-stabilation Funds			9	1,593,822	100.0%	100.0%
TOTAL SLCC	43	8,426,618	43	12,017,268	0.0%	42.6%
Total USHE						
Research	2,292	343,632,894	2,444	393,919,598	6.6%	14.6%
Instruction	267	51,793,134	263	42,887,662	-1.5%	-17.2%
Clinical	164	21,651,856	175	45,903,145	6.7%	112.0%
Other	926	88,210,874	860	97,123,555	-7.1%	10.1%
Subtotal - USHE	3,649	505,288,758	3,742	579,833,960	2.5%	14.8%

Utah System of Higher Education Contracts and Grants Report						
Institution	Fiscal Year 2009		Fiscal Year 2010		% Change	
	No.	Total $ Amount	No.	Total $ Amount	No.	Amount
ARRA Non-stabilation Funds	24	5,356,774	258	68,680,955	975.0%	1182.1%
TOTAL USHE	3,673	510,645,532	4,000	648,514,915	8.9%	27.0%

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Update on Institutional Audit Reports to the Regents' Audit Committee

Issue

Regent Policy R-565 requires the Regents to meet as needed to review audits and financial information. As part of this responsibility, the Regent Audit Committee is charged with scheduling meetings as necessary to maintain regular, independent communication and information flow between the Regent Audit Committee and trustee audit committees.

The Committee will meet January 20, 2011 with institutional trustee audit chairs, trustee chairs, and in some cases campus auditors. A report of the meetings will be provided to the Finance & Facilities Committee of the full Board, the following day, January 21, 2011.

Commissioner's Recommendation

This is an information item only. No action is required at this time.

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William A. Sederburg
Commissioner of Higher Education

WAS/GLS/DAM

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: University of Utah Sale of Guest House Expansion and South Campus Housing (Honors Housing) Project Revenue Bonds

Issue

On October 29, 2010 the University of Utah was authorized to proceed with a Series 2010 issue of Auxiliary and Campus Facilities System Revenue Bonds in an amount not to exceed $65 million, including all bonding costs, to finance the construction of the Guest House Expansion and the South Campus Housing (Honors Housing) Project. The bond issue was sold on December 16, 2010 and closed on December 28, 2010.

The $45,095,000 actual par amount of the bonds sold was nearly $20 million less than the authorized limit due to a reduced need for capitalized interest and the fact that the University was able to attain high investment grade ratings on the bonds without funding a debt service reserve. The "all-in" true interest cost of the issue is 3.19%. Additional information pertaining to the issue is provided in the attached Updated Financing Summary.

Commissioner's Recommendation

This is an information item only. No action is required.

_____
William A. Sederburg
Commissioner of Higher Education

WAS/GLS/WRH
Attachment

January 12, 2011

M E M O R A N D U M

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: LEGISLATIVE UPDATE

Issue

The Utah Legislature will convene its annual session on Monday, January 24. The Executive Appropriations Committee of the Legislature instructed each subcommittee to meet twice prior to the Legislative Session, on January 11 and January 19, to consider cuts of seven percent to this year's base budget. Associate Commissioner Buhler will prepare an update for the Board after the January 19 meeting which will be hand carried to the meeting.

Commissioner's Recommendation

This is an information item only.

_____

William A. Sederburg
Commissioner of Higher Education

WAS/DLB

January 12, 2011

M E M O R A N D U M

TO: State Board of Regents

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Commissioner's Recommendation

This is an information item only.

_____

William A. Sederburg
Commissioner of Higher Education

WAS/DLB

January 20, 2011

M E M O R A N D U M

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Legislative Update

Issue

Attached is an update from Associate Commissioner David Buhler on the pre-session meetings of the Legislature held on January 11 and 19, 2011.

Commissioner's Recommendation

This is an information item only.

_____
William A. Sederburg
Commissioner of Higher Education

WAS/DLB
Attachment

January 20, 2011

M E M O R A N D U M

To: Board of Regents

From: David L. Buhler, Associate Commissioner for Public Affairs

Subject: Report on the 2011 Session of the Utah Legislature

Appropriations

Although the Legislative Session does not begin until Monday, January 24, legislators have already begun their work. In December, the Legislature's Executive Appropriations Committee met and instructed all subcommittees to meet on January 11 and 19 to begin preparing a "base budget" bill for Fiscal Year 2011-2012, in order to address the "structural imbalance" (one-time money used for on-going purposes) in one year. This is very different than the more gradual approach recommended by Governor Gary R. Herbert-- flat budgets this year, using a portion of the State's "rainy day" fund and implementing quarterly collection of business income taxes which provides additional one-time funds. Subcommittees were instructed to prepare budgets at 93% of the current year appropriation. For the Utah System of Higher Education (USHE) and its eight institutions, this seven percent cut would amount to $47 million, or more than the total state funding of two of our institutions. This contrasts with a flat budget (with some select modest increases) in the Governor's recommendation.

The Subcommittee this year is co-chaired by Senator Steve Urquhart and Representative Mike Morley, with Representative Jack Draxler as House Vice Chair. Spencer Pratt is once again the Fiscal Analyst assigned to the subcommittee.

In addition to USHE, the subcommittee has jurisdiction for the budgets of the Utah Education Network (UEN), the Medical Education Council (MEC), and the Utah College of Applied Technology (UCAT). On January 11, the Subcommittee heard about the structural imbalance and the need to address it and then from representatives of each of these entities as to their respective histories and statutory authority. I represented the Utah System of Higher Education.

On January 19, Chair David Jordan and Commissioner Bill Sederburg provided an overview of how budget cuts have been implemented since 2008, at a time of continued significant enrollment growth. Commissioner Sederburg also presented a summary of the potential impact on the institutions and students of a further seven percent cut. This was followed by presentations of three presidents, each representing a different type of institution: President Stan Albrecht of Utah State University representing the Research Universities, President Matthew Holland of Utah Valley University, representing the Regional Universities, and President Stephen Nadauld of Dixie State College, representing his institution and the Community Colleges. Each made a compelling case for the need to support higher education and to not impose further state funding cuts. And each

President gave specific examples of how additional cuts now would have serious consequences for the institutions and the students they serve.

Following the presentations, the Fiscal Analyst distributed a list of possible cuts of up to ten percent as a starting point for discussion, not a recommendation, from which the Subcommittee could choose cuts totaling seven percent. Higher Education was also invited to provide additional suggestions. These potential cuts focused on reducing the number of credit hours students can take above what is required for a degree without financial penalty from the current Regent policy of 35 percent to 20 percent, with a requirement that the student pay the full cost of attendance and that this amount could then be cut from the budget. Also called for was an increase in teaching loads of ten percent -- again, with cuts to offset those increased loads.

The Analyst's sheet also included significant cuts to certain statewide programs including total elimination of funds provided institutions to meet the needs of the hearing impaired, and those provided to support the Campus Compact. Other programs significantly cut would be the T.H. Bell Loan Forgiveness program for teachers, student financial aid, the Regents' Scholarship, and technology (HETI). Cuts to the UEN budget also assume greater funding from tuition revenue, although further analysis is needed to calculate the exact impact. (It was suggested that the entire funding for the Medical Education Council could also be eliminated.)

The Higher Education Appropriations Subcommittee next meets on Tuesday, January 25 and Thursday, January 28, at 8:00 a.m. to 9:50 a.m., in Room Senate 210 (in the East building above the cafeteria). I expect that at these meetings we will have an opportunity to provide reactions to the options presented by the analyst.

It is important to note that the subcommittee is following the direction of Legislative Leadership and the majority caucuses in looking for areas to significantly cut the budget. The Subcommittee seems open to suggestions from USHE as to alternative places to cut, but (at least so far) there does not seem to be interest in recommending either no cuts or smaller cuts than what have been requested by their leaders. Legislative leaders have indicated that these cuts could be reduced later in the session if revenues improve. Governor Herbert's continued advocacy for his budget approach will be critical to our success.

Capital Facilities

The newly constituted Infrastructure and General Government Appropriations Subcommittee replaces the Capital Facilities Subcommittee and now includes jurisdiction for the Utah Department of Transportation. Associate Commissioner Greg Stauffer is once again taking the lead in monitoring this committee, with the assistance of Ralph Hardy. Like the Higher Education Subcommittee, the focus of this committee has been on operating budgets. Of particular note to the Utah System of Higher Education, one option being considered is total elimination of funding of capital improvements. This would have a significant negative impact on all higher education institutions.

Legislation

Two of the bills previously prioritized by the Board of Regents have now been numbered and are ready for presentation as early as next week: SB 97, Higher Education Mission-Based Funding, sponsored by Senator Urquhart, and SB 107, Higher Education Success Stipend Program,

sponsored by Senator Niederhauser. In addition, bills have been introduced to repeal in-state tuition for students who attended and graduated from a Utah High School but who are undocumented (HB 191 by Representative Wimmer), and to appropriate funding for the USU Veterinary Medicine partnership approved by the Regents in December (contingent on funding), sponsored by Representative Mathis (HB 57).

Conclusion

On both the budget and legislative fronts, it will be a challenging legislative session. It will require a united effort from our office, the Presidents and their offices, and the support and assistance of Regents, Trustees, students and other advocates of higher education, including the business community. As the Board directed in its December meeting, I will work closely with all higher education stakeholders and coordinate our efforts with the institutions and provide a weekly report during the session.

UTAH SYSTEM OF HIGHER EDUCATION
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January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Dixie State College of Utah (DSC) – Plan for University Access, Growth, and Facility Build-Out – Action Item

Issue

Dixie State College requests consideration of and support for its strategic direction, which continues the organized development of its community college and baccalaureate missions in response to regional growth and regional and state needs for a more highly educated workforce.

Background

Dixie State College serves southern Utah as the primary open access, degree-granting institution in the region. The institution has undergone considerable growth and significant changes in program offerings and the composition of its faculty to meet the needs of its growing student population.

In order to address the needs of its community and region, DSC, in cooperation with the Commissioner's Office, identified a nationally recognized consultant as part of a team charged with evaluating and recommending developmental stages required to meet the needs of the growing student body and to build foundational programs consistent with a comprehensive, regional university.

The consultant team consisted of Dr. Hal Dengerink, Washington State University; Dr. Norm Jones, Utah State University; and Dr. Teddi Safman, Assistant Commissioner for Academic Affairs. After review of materials prepared by DSC and an on-site visit, the consultant team prepared a report that recommended four stages of development:

1. Planning Process
   - Identifying a program array consistent with state definitions and national benchmarks for universities and forecasting the cost, infrastructure and personnel needs, timeline and funding needs;
2. Core Degree Implementation
   - Hiring sufficient faculty with terminal degrees and staff to open the planned expansion of programs;

3. Professional Degree Implementation and Expansion
   - Implementing new programs and achieving accreditation for programs as needed and identifying potential master's degrees based on student demand, community need and institutional readiness; and
4. Application for University Status

After receiving the consultants' recommendations, Dr. Donna Dillingham-Evans, Vice President for Academic Affairs at DSC and Dr. Elizabeth Hitch, Associate Commissioner for Academic Affairs, worked collaboratively to identify the needed program array, consistent with national benchmarks. In addition to using the consultants' analysis of foundational programs, Dr. Dillingham-Evans and Dr. Hitch did a cross comparison of program array using two other sources: (1) a national data base of institutions with 4-year degrees and enrollments greater than 5000, and (2) DSC's USHE-approved list of institutions to be used for comparison purposes. The analysis of the three sources resulted in a list of desired programs for DSC that would represent a solid core of foundational and professional programs consistent with national norms and regional needs.

Once the target array of programs was identified, DSC was able to forecast infrastructure, personnel, and funding needs, and project a timeline for program development as called for in Stage 1 of the consultants' recommendations. The actual timeline will be dependent upon the availability of funding to address the needs as outlined in the plan.

Policy Issues

The plan is the result of discussion that has spanned well over a decade. Trustees, Regents, and Legislators have provided insights leading to the current plan. The question for the Regents has been how to efficiently and effectively meet the higher education needs throughout the state and, in the case of the plan presented, the needs of southwestern and southern Utah. The Vision 2020 Strategic Plan sets out a clear goal for preparing 66% of Utah's citizens with post-secondary certificates and degrees. The plan for build-out of Dixie State College of Utah assists in the achievement of the Vision 2020 goal. It is a logical and detailed plan, and consistent with national benchmarks and projected growth for the region served. Meetings with various constituent groups reveal support for the plan, as outlined. Implementation of the plan relies upon legislative allocation of funds.

Commissioner's Recommendation

The Commissioner recommends the Regents review Dixie State College's request for consideration of its strategic direction and endorse the plan presented, with the understanding that full implementation of the plan will depend upon funding.

William A. Sederburg, Commissioner

WAS/EJH

Dixie State College
Introductory Statement
December 15, 2010

Issue

Dixie State College of Utah (DSC) requests consideration of its strategic direction, which continues the organized development of its community college and baccalaureate missions in response to regional growth and regional and state needs for a more highly educated workforce. With steady and strategic growth consistent with the proposal presented, Dixie State College would anticipate eventual designation as a comprehensive, regional, teaching university.

Background

Dixie State College serves southern Utah as the only open access, degree-granting institution in the region. The institution has undergone remarkable and dramatic transformations in a brief period of time that include significant student increases, program offerings, and composition of its faculty.

As impressive as the academic growth has been, another and increasingly important change impacts the development of the region. The college is a significant player in the economic development of southwestern Utah. Local, state, regional and national reports and comparisons all indicate important population and employment projections that depend upon broad access to a diverse range of postsecondary training and degrees.

In order to address the needs of its community and region, DSC, in cooperation with the Commissioner's Office, identified a nationally recognized consultant as part of a team charged with evaluating and recommending the development stages required in the transformation of Dixie State College to a comprehensive, regional, teaching institution.

PROPOSAL

The current proposal contains four separate documents that support Dixie State College's strategic direction. These documents include:

1. A **Planning Document** that identifies the three stages of development recommended by the consultants, a narrative describing the recent

institutional changes, a description of some prominent economic drivers for the service region, and a list of needs to implement the plan.

2. A timeline of **Baccalaureate Degrees by Name and Start Date** that shows the evolution of program growth and direction.

3. A comprehensive **Program Comparison Chart** that identifies degree categories and types of foundational degrees common to regional institutions. This chart identifies the expected degrees at typical universities based on three comparators: 1) the consultants' report , 2) national comparators, institutions with enrollments over 5000 HC/FTE, and 3) the recently approved USHE peer group for Dixie State College . Additional information in the chart includes status of identified degrees at DSC, terminal degrees as a percentage composition of department faculty, projected faculty and staffing needs, and equipment and program costs.

4. A specific three-year **Budget Plan** that address identified funding needs required to support program growth and development, student services support, IT requirements and physical plant needs as Dixie State evolves .

Planning University Access, Growth, and Facility Build-out
Dixie State College of Utah
December 15, 2010

INTRODUCTION

Dixie State College of Utah (DSC) began its 100th year of academic service in September 2010. Its history demonstrates a successful evolution that closely correlates with the evolving educational needs of its community. In Fall 2010, Dixie State again recorded the largest percentage increase in students within the state system. Its student body reflects an ever-widening basis of appeal from outside Washington County. The institution's large natural growth and development is now compounded by its important service role in the Utah System of Higher Education (USHE). Collaborative efforts between Utah's Commissioner of Higher Education and the governor's office have aided the Utah State Board of Regents with the development of a strategic document that calls for a 66 percent increase in Utahans who possess post-secondary certificates and degrees, with 55 percent of those targeted to be associate degrees or higher. The timeline to reach this goal of over 100,000 additional recipients is ten years, 2020.

In southern Utah, Dixie State College is the only open-access, degree-granting institution offering both associate and bachelor degree opportunities. Since 2005, Dixie State has transformed its offerings and its student life activities, while maintaining its central commitment to teaching and student success. Due to its recent, rapid growth and in order to extend its capacity to help meet the state's educational attainment goals, Dixie State faces growth in the number and level of degrees, growth in faculty numbers, growth in students, and growth in facility demands. This growth reinforces an existing urgency to accelerate and accommodate the college's natural transformation from a successful liberal arts two-year transfer institution into a well-developed, highly aggressive, university-level, economic engine for southern Utah; an institution that will meet the educational challenges of the future across a wide spectrum of offerings, including those found in comprehensive community colleges, baccalaureate-granting institutions, and institutions that offer high-demand and economically-driven master's degrees.

DIXIE STATE COLLEGE OF UTAH

Dixie State's rich academic heritage provides a logical and sequential foundation for its expansion and future direction. Not only has the institution demonstrated over time its consistent ability to produce academically prepared and competitive transfer students, but has also demonstrated a notable flexibility to respond to the educational and vocational needs of its service area. Quick facts about DSC include the following:

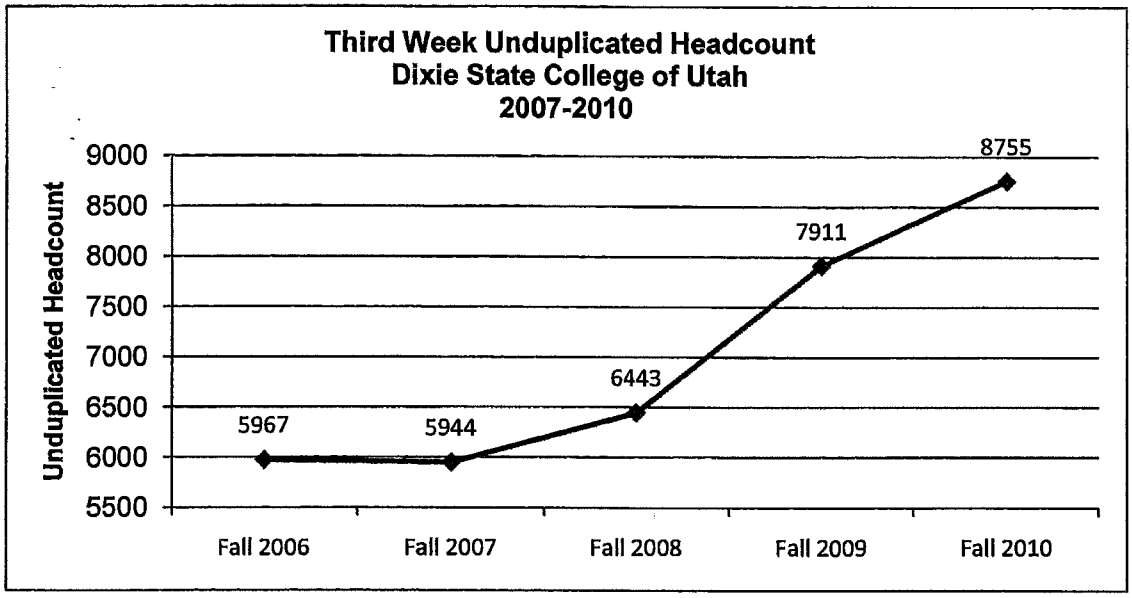
- Offerings: 19 Associate Degrees, 22 Bachelor Degrees, 9 Certificates

- Student Headcount: Fall 2007: 5944 Fall 2010: 8755 (↑ 47%)
- Student FTE: Fall 2007: 3987 Fall 2010: 6267 (↑ 57%)

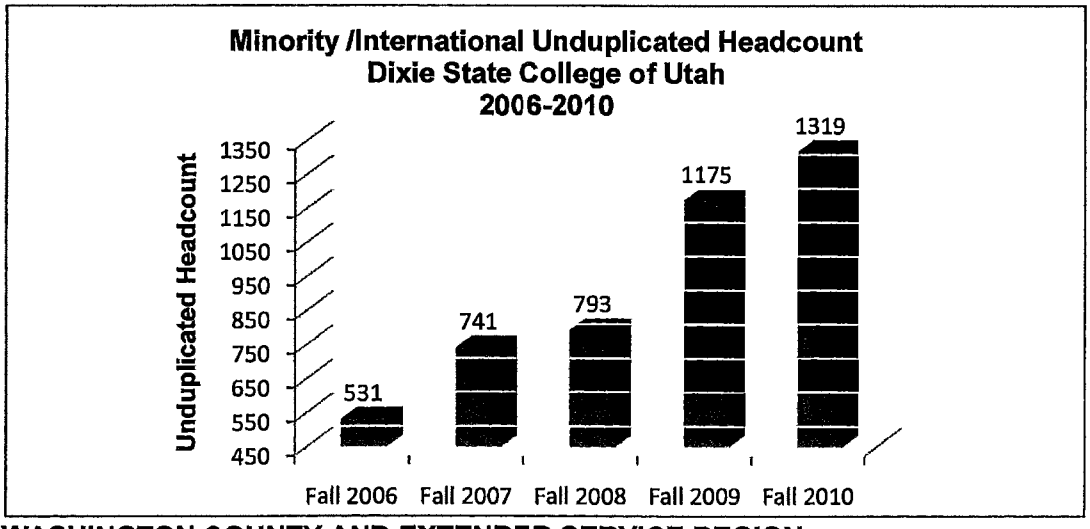
- Degrees: Associates May 2007: 864 May 2010: 894 (↑ 3%)
  Bachelors 134 318 (↑ 137%)
  Certificates 319 877 (↑ 175%)

- 145 Full-time, Regular Faculty (62% with Terminal Degrees)

- Student-to-Faculty Ratio: Vocational: 11 to 1
  Lower Division: 19 to 1
  Upper Division: 20 to 1



The story told by these few metrics is one of rapid growth. What is less obvious from the set of facts is how far the institution has evolved in a short five years. The enrollment and graduation increases are results of dramatic improvements in student life that addressed four-year recruitment and retention and the increase in student service learning activities to engage students with the community. Equally dramatic changes in the efforts to increase ethnic diversity and to globalize the educational experience have combined synergistically with new academic initiatives. Among these new endeavors are the institutionalization of formal support for student research and presentations, the expansion of library holdings, and the institutionalization of an organized First Year Experience (FYE) course built around student interests in individualized content areas.



WASHINGTON COUNTY AND EXTENDED SERVICE REGION

Washington County, despite current high unemployment rates, will have long run benefits traceable to impacts of the economic recession. Its pre-recession economy grew overly dependent upon the construction industry. According to the director of the Washington County Economic Development Council, the county's current employment as a result of the economic downturn is reflecting more diversity, which in turn, supports the promise of more stable economic development in the future. He further notes that the large inventory of available commercial and industrial real estate attracts new-found interests that would not have occurred prior to the recession. A number of recent studies, economic analyses, and forecasts, including those from the Utah Department of Workforce Services and BEBR (Bureau of Economic and Business Research) for southern Utah, indicate that Washington County will continue to exhibit the greatest economic growth in its region. Analysis by Dr. Arthur Nelson, the director of Metropolitan Research at the University of Utah, confirms this forecast about the geographical unit called The Canyon Megapolitan Area, which includes Washington and Iron Counties in Utah and Nye, Clark, and Mohave Counties in Nevada. The positive economic growth outlook for Washington County is also noted in the recently published *The New York Times* 2011 Almanac, which ranks St. George, Utah, first among metropolitan statistical areas in job growth from 2008-2030 (p. 352).

Important indicators include:

- **Washington County Population Facts**:
  - County has not lost population during the recession.
  - The share of new growth for Southern Utah (Iron, Washington, Kane, Garfield, Beaver Counties) increased from 32% in 1950 to 69% in 2007.
  - Will grow 367% (440k) by 2040; 2.5 times faster than the Canyon region as a whole.
  - The median age of the county is 29 years (2006 U.S. Census American Community Survey).
  - The population share for over age 65 will decline from 17% to 15% by 2020 according to the Governor's Office of Planning and Budget (GOPB).

- *Forbes Magazine*, January 30, 2008, ranked St. George as the 7th fastest growing small metro area in the United States.

- **Washington County Employment Facts**:
  - Employment growth will increase 87% more than the Canyon region as a whole.
  - Regional employment is driven by growth in Washington County.
  - Two out of every three jobs in southern Utah are in Washington County.
  - GOPB projected growth 2005-2020 in Washington County in these sectors:
    - Education and Health Services, 153.2%
    - Professional and Business Services, 101.3%
    - Government, 89.7%
    - Construction, 85.6%
  - Construction starts were up 65% from January to July for 2010 over the same period in 2009.
  - One of the most rapidly growing occupational groups for the county is computer/mathematical employment.

- Utah Department of Workforce Services' publication, "Utah Job Outlook," states:
  "In general, employment expansion in Washington County is expected to outpace

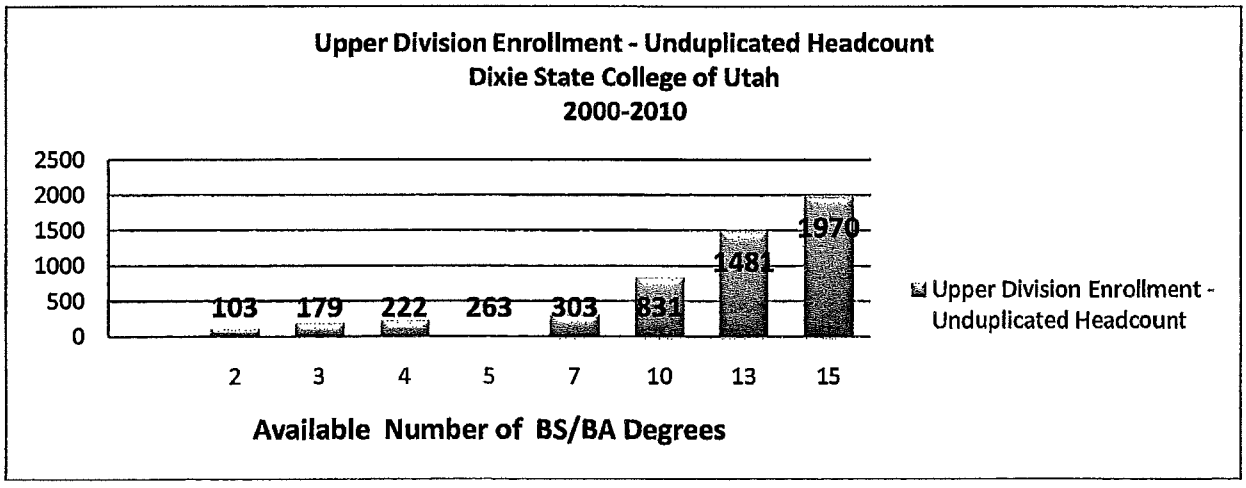
state-wide growth. Health-related occupations are expected to show the most rapid rate of growth over the next decade." (p. 46)

The projected rise in population and the rapidly growing employment sectors in health services, professional and business services, as well as the developing computer/mathematical employment opportunities, require college, community, and state leaders to provide greater support for the institutional growth over the past five years and for growing higher education as an essential economic engine and contributor to the quality of life in Washington County.

WASHINGTON COUNTY EDUCATIONAL ATTAINMENT

Historically, county employment needs and student interests resulted in parallel growth of the college and the county. Since 2000, the types of education needed to support potential new employers require a substantially larger degree pipeline than previously existed. Dixie State College provides opportunities that reflect the current employers: in order to support a more diverse, appropriate, and adequately educated workforce, it requires the degree pipeline that will prepare students to answer future economic expansion needs in the county and the region.

The challenges inherent in this task are substantial. According to the U.S. Census Bureau 2006-2008 American Community Survey Data, Utah's associate degree or higher attainment rate is currently 39 percent for its population that is 25 years and older. Washington County's rate for the same demographic group is only 30 percent. To reach the current state attainment rate in Washington County, an additional 13,500 residents within the target group need to complete baccalaureate degrees. The state educational plan is to add another 16 percent with degrees, resulting in the need to expand capacity and degree production by a total 25 percent. In order to attract and graduate the projected increase of local residents, Dixie State College needs a bigger pipeline, which includes types of degrees and number of instructors. A simple correlation is that with every core and foundational degree added to the institution, there is a substantial increase in upper-division enrollments and, subsequently, graduation rates. In turn, those upper-division courses place a new 30 percent increase on instruction.



ECONOMIC IMPACT

According to Workforce Services' website, Dixie State College ranks number two on Washington County's largest employers list. At this rank, the institution makes a significant financial impact on the county. Not only does it provide a substantial payroll infusion, but the quantity of out-of-area students provides robust housing investment and retail influences. Although the institution actively works with multiple advisory boards to insure that its curriculum reflects current industry needs, and builds career pathways for programs that begin with technical training that leads to degree programs, more is needed. In order to attract and support employers who will bring a diversity of high-paying, non-construction jobs to the region, Dixie State College needs to complete its anticipated set of instructional offerings. Examination of institutions in regions with similar demographics to Washington County indicates a full range of higher education opportunities is typically available in local communities. These offerings include a spectrum of training and education, including career and technical training, associate and baccalaureate programs, and graduate degrees.

When looking to expand or relocate, companies look for a well educated population to provide technical and management resources. Since 2008, companies, including at least one Corporate 100 company, have evaluated St. George as a place to expand businesses. Among the reasons given by a corporate spokesperson of a Corporate 100 software company for not selecting St. George were:

1. Not enough residents with bachelor degrees in the county.
2. Not enough students in the educational pipeline.
3. Not enough degrees in the pipeline.

The major impacts of Dixie State College of Utah as a university on the regional economy will likely continue to be in human capital creation, capital investment, regional leadership, and influence on the regional culture[1]. As the region continues to grow and attract companies in the manufacturing, information, and healthcare industries, Dixie State will play a large and pivotal role in educating local residents to be able to take high-paying jobs in local businesses and in building career pathways that provide stackable credentials leading from technical entry level positions through graduate-level management preparation.

PLANNING ACCESS, GROWTH, STATUS

As Utah's higher-education communities, governing bodies, and state law and executive leaders examine what is best for Dixie State College, Washington County, and Utah's future, there is an increasing awareness that higher education is a vital and necessary component of economic recovery and sustainability. Related conversations have resulted in USHE's *Vision 2020 Plan* and a renewed focus on post-secondary pipelines, student retention in those pipelines, pipeline capacities, and the need for transformative actions in higher education that will produce efficient, quality opportunities for a greater number of students.

In southern Utah, the envisioned transformation includes university access for residents of Washington County and its extended region; a transformation well underway that now has a greater need for expediency. In order to support the breadth and depth of possibilities for economic development in the region, there must be a well educated population and a consistent

rate of development in succeeding generations. Program and service expansion and the eventual designation of University status for Dixie State is well suited to serve the educational goals of the region, address the local attainment issues, and fuel the economic development of well paying jobs, especially those in the information sector.

In order to provide the residents of Washington County and the state's southern region with the most expeditious supports and most feasible educational opportunities of quality, it appears beneficial to undertake a well orchestrated planning process. Consequently, the USHE Commissioner of Higher Education and the President of Dixie State College jointly hired a consulting team to evaluate and recommend the development stages required in the transformation of Dixie State College to a comprehensive, regional, teaching institution.

The following stages were suggested by the consultants:

Stage 1: PLANNING PROCESS

- Forecasting cost, infrastructure needs, and personnel needs.
- Implementing institutional research and assessment models.
- Developing course clusters from which professional degrees flow.
- Securing funding for Stage 2.

Stage 2: CORE DEGREE IMPLEMENTATION

- Hiring sufficient faculty with terminal degrees and staff to open additional core degree programs.
- Implementing expansion of the physical plant and research facilities.
- Tracking new degree programs to assist in planning expansion of professional degrees.
- Securing funding for Stage 3.

Stage 3: PROFESSIONAL DEGREE IMPLEMENTATION AND EXPANSION

- Existing and future professional degrees in Education, Health Sciences, Business, Communication, etc. to grow from the stems of the core degrees.
- Established degrees are "tuned" to ensure that degree clusters support one another efficiently.
- Accreditation for professional degrees is achieved.
- Possible master's degrees are identified based on research into student demand, community need, and institutional readiness.

Stage 4: APPLICATION FOR UNIVERSITY STATUS

PLAN IMPLEMENTATION

Dixie State College is in transformation. Increases in student enrollment and diversity reflect overall enthusiasm for the institution's development. Acknowledging that Dixie's transformation will continue, the administration built on previous internal studies to create strategic documents addressing the actions outlined in Stage 1 of the planning process. Enhancing the original strategic plan with those elements required to meet the growth and educational needs of the region and transition to university status, the current documents forecast costs, infrastructure needs and personnel positions needed. The projections for required additions to degree offerings are based upon traditional course groupings suggested by the consultants. With the possible exception of one degree (philosophy), the current list of new degree proposals reflects Dixie State College's original 'buildout" guide. Details are available for review upon request, but the following are summary needs for a completed transition to a basic, regional, teaching university:

- Faculty: 61 FTE
  - 15 FTE GE Support
  - 28 FTE Workload Adjustments
  - 6 FTE Ph.D. Department Specific Ratio Boost to 60%
  - 18 FTE Specific New Degree Positions
  - 9 FTE Masters Degree Support
- Non-faculty Staffing: 50 FTE
  - 9 FTE Lecture Advisors
  - 21 FTE Advisors and Student Services
  - 2 FTE Mental Health Counselors
  - 18 FTE College Services Positions
- Degrees: 9
- Costs: $8,984,400
  - (Includes Operating Budgets, Equipment, Software Licenses, Equity, etc.)

SUMMARY

As Utah focuses its efforts through the 2020 Plan to produce a substantial increase in its educated workforce, Washington County requires accelerated effort and infusion of support to level the playing field just to reach the state's starting point. In Utah's Dixie, the first 9 percent (13,500 people) increase in degree attainment will be needed in order to coincide with Utah's current overall attainment rate. Instructional capacity and degree-production rates are limited by two major constraints: lack of teachers and approved offerings. As evidenced by the apparent relationship of upper division growth and the number of available degrees, providing additional access to a traditional set of degrees at Dixie State College will show an immediate return on the investment made. In order for Washington County to contribute a fully developed workforce to Utah's future, all that is needed is commitment and funding for Dixie State College and its transformation to university status.

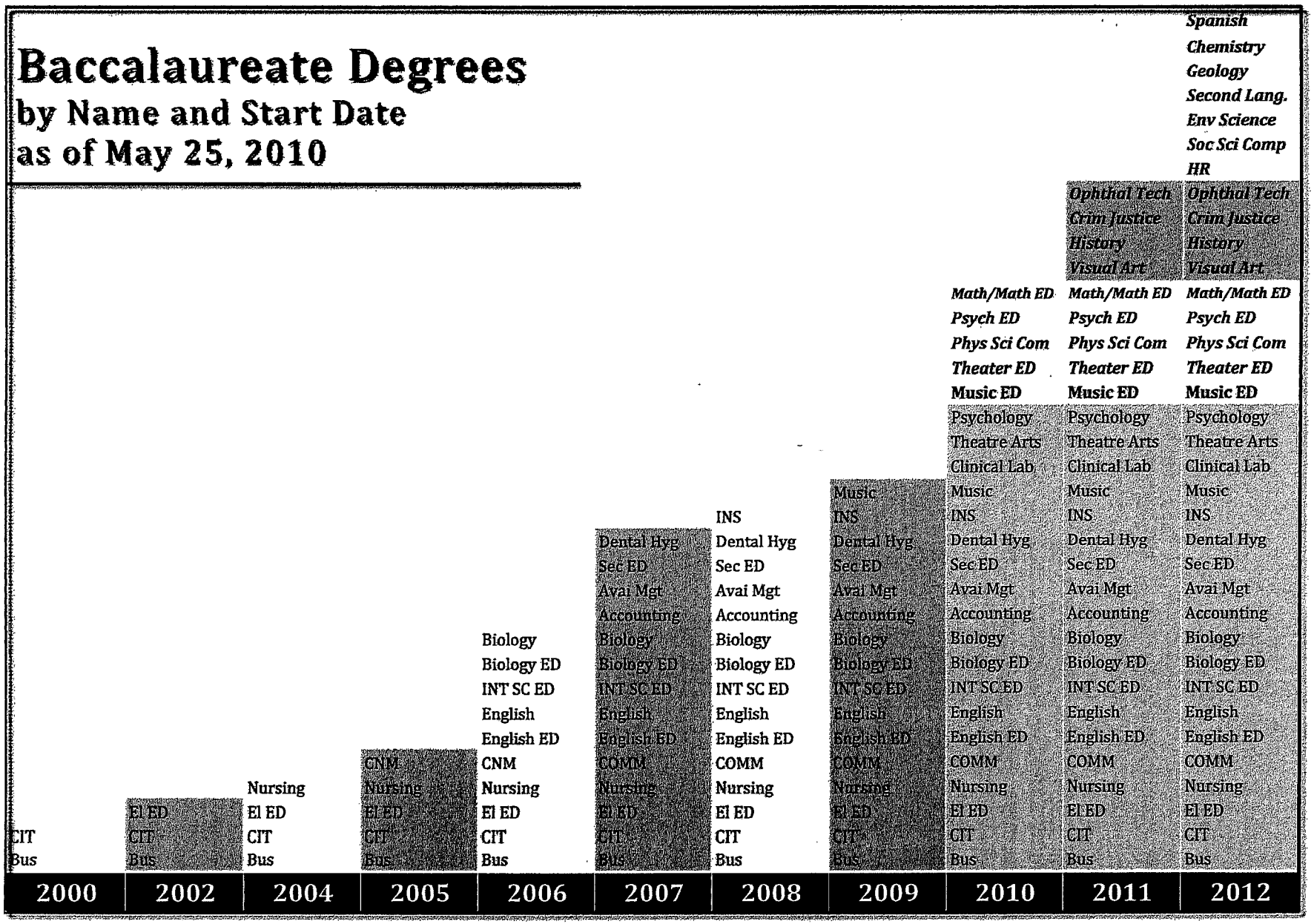
[1] "Assessing the Regional Economic Development Impacts Universities: A Review of Current Approaches." International Regional Science Review, Vol. 30, no.1 (January 2007): 2046.

Programmatic Comparisons
University Status
Dixie State College
November 29, 2010

	PROGRAMS		CONSULTANTS	NATIONAL COMPARATORS: Institutions with 4-year Degrees and Enrollments >5000	USHE-Identified Institutions Comparison	DIXIE (NOW)	DIXIE (FUTURE)	CURRENT FTE (with Terminal Degrees)	Terminally Degreed Faculty FTE NEEDED to Reduce Workload from 27 to 24 Credits	Current Percentage of Tenure-Track FTE with Terminal Degrees	FACULTY FTE NEEDED to Reach 60% Terminally Prepared, Tenure-Track FTE with Terminal Degrees	Additional Terminally Prepared, Tenure-Track FTE to Start Degree	Master's Degree Faculty FTE Increase	FACULTY FTE COST	BASE ACADEMIC SUPPORT COSTS (ADMIN ASST, ADVISORS, CURRENT EXPENSE, ADVISORS, LIBRARY SUPPORT, EQUIP MAINTENANCE)	ONE-TIME START-UP COSTS	COMMENTS
Arts	Music		x	x	x	x		5	1	83%				$100,000			"USHE" column represents the fields of study 50% of peer institutions have.
	Theatre Arts		x	x	x	x		5	1	100%				$100,000			"National" column represents programs offered by 50% of the IPEDS 4-year universities with student enrollments >5000 FTE.
	Art		x	x	x		2012	4	1	100%		1		$100,000	$100,000		
Humanities	English		x	x	x	x		16	2	69%				$200,000			
	History		x	x	x		2012	2		100%		2		$200,000	$35,000		
	Philosophy		x	x				1		100%		2		$200,000	$30,000		
	Foreign Language	Spanish		x	x		2012	1		30%	1	1		$200,000	$25,000		
			x	x (French)	x		2013					3		$300,000		$50,000	
Science	Biology		x	x	x	x		10	1	90%				$100,000			
	Physics		x	x	[redacted]	Physical Science Composite (Chemistry, Physics, Geology)	2011		1			2		$375,000	$100,000	$250,000	Composite degree pulls from Chemistry and Earth Sciences/Geology.
	Chemistry		x	x			2014	3		75%		2		$200,000	$50,000	$1,000,000	
	Earth Sciences		x	No				2		67%							
	Computer Science		x	x	x	Computer Information Technology	2010	6	1	83%				$100,000			Reorganized Computer Science B.S. proposed for 2010
	Mathematics		x	x	x		2010	4	1	50%	1			$100,000		$100,000	

PROGRAMS			CONSULTANTS	NATIONAL COMPARATORS: Institutions with 4-year Degree and Enrollment > 5000	USHE-Identified Institutions Comparison	DIXIE (NOW)	DIXIE (FUTURE)	CURRENT FTE (with Terminal Degree)	Terminally Degreed Faculty FTE NEEDED to Reduce Workload from 27 to 24 Credits	Current Percentage of Tenure Track FTE with Terminal Degrees	FACULTY FTE NEEDED to reach 60% Terminally Prepared	Additional Terminally Prepared Tenure-Track FTE to Start Degree	Master's Degree Faculty FTE Increase	FACULTY FTE COST	BASE ACADEMIC SUPPORT COSTS (ADMIN ASST, ADVISORS, CURRENT EXPENSE, ADVISORS, LIBRARY SUPPORT, EQUIP MAINTENANCE)	ONE-TIME START-UP COSTS	COMMENTS
Social Sciences	Psychology		x	x	x	x		5	1	100%							
	Political Science		x	x	x	[redacted]	2012	2				2		$300,000	$45,000		Composite Degree pulls from Criminal Justice and Sociology.
	Sociology		x	x	x	[redacted]		1		100%		2		$200,000	$20,000		Required for independent degree.
	Anthropology		x	No													
	Communication		x	x	x	x		7	1.25	70%				$100,000			
Other	Elementary Education			x	x	x		5	1	75%			3	$300,000	$25,000	$100,000	
	Business	Business, Marketing, & Manag't		x	[redacted]	x		4	1	100%			3	$300,000	$25,000		
		Accounting		x	[redacted]	x		2		67%							
		Finance		x	[redacted]			1		100%				$150,000			
		Economics		x				1		100%				$100,000			
	Health Professions (Nursing)			x	x	x		2		20%	2			$400,000	$25,000		Three faculty members will complete their doctorates by 2012.
	Liberal Arts/Integrated Studies			x	x	x					1			$100,000			Maybe consider a Philosophy track. Primary instruction through departments.
	Engineering and Related Fields				x												
General Education/Associate Degree/Enrollment Growth									15					$1,500,000	$2,479,400	$350,000	General Load Reduction, 8 Growth Factor 1 Faculty FTE: 150 Student FTE, 7 IT, SS Support, Business Spport
Professional Master's Degrees													3	$300,000		$100,000	Support for Graduate Committee and Advisement Work ; Graduate office, Advisement and Administrative Support; Master's Level instriction:12 Hours per sem Release for Chairing Committees up to 3 Hours for 6 students
Column Totals							89	28.25		5	18	9	$6,025,000	$2,959,400	$1,950,000	Total 60.25 Faculty FTE including benefits Support Staff Across Campus	
Aggregate Totals											60.25 Faculty FTE		$8,984,400				Ongoing Money includes salary benefits and position supports.

Baccalaureate Degrees
by Name and Start Date
as of May 25, 2010



Dixie State College of Utah

Community College, Four-year Degree Build Out, and University Foundation

Budget Plan 2012-2014

DIXIE STATE COLLEGE OF UTAH

	Year 1 FY12			Year 2 FY13			Year 3 FY14		
Faculty									
Economic Development									
Business									
	Marketing	90,000		Economics	80,000		Marketing	90,000	
	Finance	150,000		Finance	125,000		Management	175,000	
				Operations/Productions	100,000		Human Resources	75,000	
Computer Sci									
	VT/Design	80,000							
			$320,000			$305,000			$340,000
Community College Mission: Health Care									
Nursing				Nursing	80,000		Nursing (2)	160,000	
	CLS	65,000		CLS	95,000		Ophthalmology (2)	160,000	
				Surgical Tech	95,000		Dental Hygiene	85,000	
			$65,000			$270,000			$405,000
Core and Foundational Programs									
Arts									
Art	Art History	80,000							
Humanities									
History	History	80,000					History	80,000	
Philosophy				Philosophy	80,000		Philosophy	80,000	
Foreign Languages	Spanish	80,000					Spanish	80,000	
				Other Languages	160,000		Other Language	80,000	
Sciences									
Physical Sciences	Physics	110,000		Physics	110,000		Chemistry (2)	180,000	
Mathematics	Statistics	90,000							
Social Sciences									
Criminal Justice	Criminal Justice	80,000							
Political Science	Political Science	80,000		Political Science	80,000				
Sociology				Sociology	85,000		Sociology	85,000	
Other									
Elementary Ed							Elementary Education (3)	210,000	
Integrated Studies				Integrated Studies	75,000				
			$600,000			$590,000			$795,000
General Education Support And Workload Reductions	Eight Positons	600,000		Five Positions	375,000		Five Positions	375,000	
			$600,000			$375,000			$375,000
Library Support			$75,000			$100,000			$50,000
Current Expense			$280,300			$228,400			$161,300
Yearly Academic Sub-Totals			$1,940,300			$1,868,400			$2,126,300

Dixie State College of Utah

Community College, Four-year Degree Build Out, and University Foundation

Budget Plan 2012-2014

	Year 1 FY12		Year 2 FY13		Year 3 FY14		
Staff Equity		**$100,000**		**$100,000**			**$100,000**
Student Services							
Counselor	91,000		Job Placement Coordinator	56,000	Service Learner Coordinator	49,000	
IT Student Services Coordinator	65,000		Assistant Director of Testing/Office Manager	63,000	Security Officer	56,000	
Adult & Transfer Advisor	56,000		Counselor	84,000	Retention Advisor	60,000	
Financial Aid Advisor	56,000		Veterans Affairs Coordinator	56,000	Assistant Activities /Service Learning Di	56,000	
International Student Coordinator	63,000		Assistant Director of Admissions	56,000	Wellness Center Secretary	37,000	
Coordinator of Intramurals	49,000		Multicultural Advisor	56,000	Director of Counseling Center	106,000	
Employment Counselor	63,000		Assistant Scholarship	56,000	Financial Aid Advisor	56,000	
Coordinator of Outdoor Recreation	49,000		Director of Assessment	91,000	Security Officer	49,000	
		$492,000		**$518,000**			**$469,000**
College Services							
Business Services							
Senior Accountant	81,000		Front-end Cashiering System	38,000	Purchasing Buyer	30,000	
Staff Accountant	26,500		Front-End P/R System	16,000	Payroll Clerk	28,000	
	$107,500			$54,000		$58,000	
Campus Services							
Custodial PT & Supplies	30,000		PT HVAC 24 Hr. coverage	30,000	Cust. & Supplies	30,000	
Building Maintenance FT	53,000		Risk/Safety Officer	70,000	Bldg. Maint. Supplies	3,500	
Mail/Freight postage & PT	2,000		Haz Mat Disposal	3,000	Mail/Frt. & PT	5,000	
			Increased Moving & Occupancy	2,000	Training Material	2,000	
					HazMat Disposal	2,000	
					Moving & Occupancy	4,000	
	$85,000			$105,000		$46,500	
Information Technology							
Programmer/Analyst - Sys admin	70,000		Computer Lab Manager	65,000	Ongoing Computer Replacement	40,000	
Security Technologist (Cameras/Card Locks)	65,000		Lead Technician	65,000	Content Management System	30,000	
IT Wiring Specialist	65,000		Network Maintenance Contracts	50,000	Network Maintenance Contracts	10,000	
			IT Tech Wages	40,000	VOIP Project	50,000	
Ongoing Computer Replacement	40,000		Distance Education Maintenance	25,000	Ongoing Computer Replacement	40,000	
Content Management System	30,000		Hurricane Center Qwest GeoMax	14,400	Content Management System	30,000	
					Network Maintenance Contracts	10,000	
					Distance Education Maintenance	10,000	
					Network/Telecom Technician	65,000	
	$270,000			$259,400		$285,000	
		$462,500		**$418,400**			**$389,500**
Yearly Institutional Totals		**$2,994,800**		**$2,904,800**			**$3,084,800**
Three-Year Total							**$8,984,400**

Note: All salaries include benefits

January 12, 2011

MEMORANDUM

To: State Board of Regents

From: William A. Sederburg

Subject: General Consent Calendar

The Commissioner recommends approval of the following items on the Regents' General Consent Calendar:

A. Minutes – Minutes of the Regular Board Meeting held December 9, 2010, at the Regents' offices in Salt Lake City, Utah

B. Grant Proposals

1. Utah State University –.Naval Research Lab; "Advanced Ground, Air, Space, Systems Integration (AGASSI) Task Order 3"; $2,899,054.05. Lance D. Fife, Principal Investigator.

2. Utah State University – Naval Research Lab; "Advanced Ground, Air, Space, Systems Integration (AGASSI) Task Order 4"; $3,660,033.62. Lance D. Fife, Principal Investigator.

3. Utah State University – Institute of Allergy and Infectious Diseases; "Animal Models of Infectious Diseases (IDIQ)"; $1,240,821.97. John D. Morrey; Principal Investigator; Brian Gowen and Justin G. Julander, Co-Principal Investigators.

4. Utah State University – "Apoptosis and Reprogramming in Bovine IVF and Nuclear Transfer Embryos"; $1,455,920. S. Clay Isom, Principal Investigator; Abby Benninghoff, John R. Stevens, and Kenneth L. White, Co-Principal Investigators.

5. Utah State University – National Institutes of Health; "Bovine Somatic Cell Nuclear Transfer: A Unique Model of Placental Insufficiency"; $1,785,000. Kenneth L. White, Principal Investigator; Chris Davies, Co-Principal Investigator.

6. Utah State University – Naval Research Lab; "F-16 Common Configuration Implementation Program (CCIP)"; $6,000,000. Douglas L. Jewell, Principal Investigator.

7. University of Utah – Agency for Health Care Research and Quality; "Improving Hospital"; $2,482,950. Janice M. Morse, Principal Investigator.

8. University of Utah – National Institutes of Health/National Institute of Allergy and Infectious Diseases; "HCV RNA Therapeutics"; $2,725,914. Darrell R. Davis, Principal Investigator.

9. University of Utah – National Institutes of Health; "Symbiont Models"; $2,725,000. Eric W. Schmidt, Principal Investigator.

10. University of Utah – National Institutes of Health; "Functional Polymersome"; $1,865,000. You Han Bae, Principal Investigator.

11. University of Utah – National Institutes of Health; "Biogenic Amines"; $1,607,125. Annette E. Fleckenstein, Principal Investigator.

12. University of Utah – National Institutes of Health/National Cancer Institute; "Cancer Therapeutics"; $1,194,000. Darrell R. Davis, Principal Investigator.

13. University of Utah – National Institutes of Health; "Isoprenoid Biosynthesis"; $2,622,831. Charles Dale Poulter, Principal Investigator.

14. University of Utah – National Institutes of Health; "Marine Natural Products"; $2,169,861. Jon Rainier, Principal Investigator.

15. University of Utah – National Institutes of Health; "Neuro Control and Motor"; $1,865,000. Franz Goller, Principal Investigator.

16. University of Utah – National Institutes of Health; "High-Content Calcium Imaging"; $1,816,050. Russell Teichert, Principal Investigator.

17. University of Utah – National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases; "Regulation in Early Adulthood"; $3,284,184. Cynthia Berg, Principal Investigator.

18. University of Utah – National Institutes of Health/National Institute of Child Health and Human Development; "Emotion Regulation and Narrative"; $1,308,125. Monisha Pasupathi, Principal Investigator.

19. University of Utah – National Institutes of Health; "Real-Time MRI Guided Ablation"; $2,629,980. Robert S. MacLeod, Principal Investigator.

20. University of Utah – National Institutes of Health/National Heart Lung and Blood Institute; "Mechanisms of Herg1 Activators"; $1,865,000. Michael C. Sanguinetti, Principal Investigator.

21. University of Utah – National Institutes of Health; "Genomics of Mitochondrial Prot"; $7,140,309. E. Abel, Principal Investigator.

22. University of Utah – National Institutes of Health/National Institutes of Biomedical Imaging and Bioengineering; "Improved MRI Temp Imaging"; $2,796,229. Dennis L. Parker, Principal Investigator.

23. University of Utah – National Institutes of Health; "Rare Variant"; $2,780,483. Steven C. Hunt, Principal Investigator.

24. University of Utah – National Institutes of Health/National Institute of General Medical Sciences; "Graphical Models for Linkage"; $2,746,811. Alun William Thomas, Principal Investigator.

25. University of Utah – National Institutes of Health/National Institute of General Medical Sciences; "Targeting Continuation"; $2,646,374. Mario R. Capecchi, Principal Investigator.

26. University of Utah – National Institutes of Health/National Institute of Allergy and Infectious Diseases; "Genetic Susceptibility U01"; $2,611,000. Neil Edward Bowles, Principal Investigator.

27. University of Utah – National Institutes of Health/National Heart Lung and Blood Institute; "Dynamic Cardiac MRI"; $2,353,690. Edward DiBella and Victor Rebok, Principal Investigators.

28. University of Utah – National Institutes of Health; "Screening Membrane Proteins"; $2,108,566. David G. Myszka, Principal Investigator.

29. University of Utah – National Institutes of Health/National Eye Institute; "Ocular Inflammation"; $1,891,955. Ivana DeDomenico, Principal Investigator.

30. University of Utah – National Institutes of Health; "TMEM103"; $1,881,250. Lori A. Wagner, Principal Investigator.

31. University of Utah – National Institutes of Health; "Functional Assessment of FAI"; $1,865,000. Andrew Edward Anderson, Principal Investigator.

32. University of Utah – National Institutes of Health; "FGF8 During Lung Development"; $1,865,000. Anne M. Moon, Principal Investigator.

33. University of Utah – National Institutes of Health; "RBP-4 Receptor Vit. A Transport"; $1,865,000. Timothy Eugene Graham, Principal Investigator.

34. University of Utah – National Institutes of Health; "Liver Cancer"; $1,681,875. Li Wang, Principal Investigator.

35. University of Utah – National Institutes of Health; "Iron Chelators for AD"; $1,240,375. Gang Liu, Principal Investigator.

36. University of Utah – National Institutes of Health; "Signaling in Cardiomyopathy"; $1,043,628. E. Abel, Principal Investigator.

37. University of Utah – Utah State Office of Education; "Utah Data Alliance"; $3,988,120. Lisa B. Kuhn, Principal Investigator.

38. University of Utah – National Institutes of Health; "Multiplexed Biomarker Platform"; $1,344,000. Marc D. Porter, Principal Investigator.

39. University of Utah – National Institutes of Health; "Modeling of Genomic Data"; $1,241,261. Orly Alter, Principal Investigator.

40. University of Utah – National Institutes of Health/National Institute of Mental Health; "Sequencing Autism Pedigrees"; $4,324,681. Hilary H. Coon, Principal Investigator.

41. University of Utah – National Institutes of Health/National Institute of Child Health and Human Development; "DS Imaging - Resubmission"; $3,675,067. Julie R. Korenberg, Principal Investigator.

42. University of Utah – National Institute of Standards and Technology; "Stimuli-Responsived Hydrogel"; $3,795,322. Florian Solzbacher, Principal Investigator.

43. University of Utah – National Science Foundation; "Robotic Treadmill Therapy"; $1,962,860. John Hollerbach, Principal Investigator.

44. University of Utah – National Institutes of Health/National Heart Lung and Blood Institute; "Edema, Conduction and Gap Jun"; $1,881,250. Steven Poelzing, Principal Investigator.

45. University of Utah – Research Partnership to Secure Energy; "Heterogeneity in Gas Shale"; $1,430,999. Rebecca M. Brannon, Principal Investigator.

46. University of Utah – U.S. Department of Energy; "Irradiation Effect on Concrete"; $1,060,700. Luis Ibarra, Principal Investigator.

47. University of Utah – Health Resources and Services Administration; "Advanced Education Nursing"; $6,933,476. Patricia A. Murphy, Principal Investigator.

48. University of Utah – National Institutes of Health; "Etiology of Suicide"; $1,865,000. Sheila Elizabeth Crowell, Principal Investigator.

49. University of Utah – National Institutes of Health/National Cancer Institute; "Cancer Associated Venothrombosis"; $3,670,105. Kathryn Morton, Principal Investigator.

50. University of Utah – U.S. Department of Defense; "Breast Cancer Modeling"; $2,984,000. Alana Lee Welm, Principal Investigator.

51. University of Utah – M. D. Anderson Cancer Center; "Mechanisms CML Progenitor Cell"; $1,517,477. Michael W. N. Deininger, Principal Investigator.

52. University of Utah – National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases; "Gastric Bypass"; $3,612,227. Steven C. Hunt, Principal Investigator.

53, University of Utah – Arteriocyte Inc; "PRP CLI"; $3,000,000. Amit N. Patel, Principal Investigator.

C. Awards

1. Utah State University – International Continental Scientific Drilling Program; "HOT SPOT: The Snake River Scientific Drilling Project"; $1,000,000. John Shervais, Principal Investigator.

2. University of Utah – National Institutes of Health/National Eye Institute; "Dev Complement Mod Therapy"; $2,986,452. Greg Hageman, Principal Investigator.

3. University of Utah – National Institutes of Health/National Institute of Child Health and Human Development; "CPCCRN"; $2,600,795. J. Michael Dean, Principal Investigator.

4. University of Utah – National Institutes of Health/National Cancer Institute; "NLST PLCO"; $1,146,946. Saundra S. Buys, Principal Investigator.

5. University of Utah – Utah State Office of Education; "Utah Data Alliance"; $2,072,671. Lisa B. Kuhn, Principal Investigator.

William A. Sederburg, Commissioner

Attachment

STATE BOARD OF REGENTS MEETING
REGENTS' OFFICES, SALT LAKE CITY, UTAH
DECEMBER 9, 2010

Contents of Minutes

STATE BOARD OF REGENTS MEETING
REGENTS' OFFICES, SALT LAKE CITY, UTAH
DECEMBER 9, 2010

Minutes

Regents Present
David J. Jordan, Chair
Bonnie Jean Beesley, Vice Chair
Jerry C. Atkin
Brent Brown
Daniel W. Campbell
Rosanita Cespedes
France A. Davis
Meghan Holbrook
Nolan E. Karras
Robert S. Marquardt
Carol Murphy
Jed H. Pitcher
William Prows
David Smith
Marlon O. Snow
Teresa Theurer
John H. Zenger

Regents Excused
Katharine B. Garff
Greg W. Haws

Office of the Commissioner
William A. Sederburg, Commissioner of Higher Education
Jeff Aird, Intern
Holly Braithwaite, Director of Communications
David L. Buhler, Associate Commissioner for Public Affairs
Joyce Cottrell, Executive Secretary
Joseph Curtin, Director of Institutional Research and Analysis
Richard Davis, Deputy Executive Director, UHEAA
Stephanie Davis, Assistant Commissioner for Administrative Services
David Feitz, Associate Commissioner and Executive Director, UHEAA
Ralph Hardy, Special Assistant to the Associate Commissioner
Elizabeth J. Hitch, Associate Commissioner for Academic Affairs
Melissa Miller Kincart, Assistant Commissioner for Outreach and Access
Cameron K. Martin, Associate Commissioner for Economic Development and Planning
Darren Marshall, Manager of Audit and Financial Services
Paul C. Morris, Assistant Commissioner for Budget and Planning
Phyllis C. Safman, Assistant Commissioner for Academic Affairs
Gregory L. Stauffer, Associate Commissioner for Finance and Facilities
Joseph Watkins, Executive Director, Utah Student Association
Gary S. Wixom, Assistant Commissioner for Academic Affairs
Lynne Ward, Director, Utah Educational Savings Plan

INSTITUTIONAL REPRESENTATIVES
University of Utah – David W. Pershing, Senior Vice President for Academic Affairs and Provost
Utah State University – President Stan L. Albrecht

Weber State University – President F. Ann Millner
Southern Utah University – President Michael T. Benson
Snow College – President Scott L. Wyatt
Dixie State College – President Stephen D. Nadauld
Utah Valley University – President Matthew S. Holland
Salt Lake Community College – President Cynthia A. Bioteau

(Other institutional representatives attended the meeting. The list is on file in the Commissioner's Office.)

Other Guests
Jim Grover, Governor's Office of Planning and Budget
Carson Howell, Governor's Office of Planning and Budget
Kelly Murdock, Wells Fargo Securities
Spencer Pratt, Office of the Legislative Fiscal Analyst
Blake Wade, Ballard Spahr

Chair Jordan welcomed everyone and called to order the meeting of the Committee of the Whole at 9:08 a.m. He excused Regents Garff and Haws and briefly reviewed the day's agenda.

Commissioner's Report

Recognition. Commissioner Sederburg commended President Millner for taking part at the AASCU Annual Meeting as a panelist on embedded community colleges. He reported she had represented Utah very well in the discussion of various models of delivery. The Commissioner recognized President Bioteau for receiving the Athena Award, a prestigious award, from the Salt Lake Chamber and Wells Fargo Women's Financial Services. The Athena Award is given annually to an active Chamber member "who demonstrates excellence, creativity and initiative in business, provides valuable service by devoting time and energy to improve the quality of life for others in the community, and assists women in reaching their full leadership potential." Dr. Sederburg announced that Carson Howell would join the Commissioner's staff on December 27 as Manager of Policy Research.

Updates. Commissioner Sederburg reported briefly on a national conference he had attended. The topic was "Raising the Bar in Tough Financial Times." The conference was sponsored by the National Governors Association, the National Conference of State Legislatures, and the Association of Governing Boards. Attending the seminar were 80 educational leaders and 30 CEOs of national organizations. He remarked that the states need to get control of Medicaid costs before they overwhelm all other aspects of the states' budgets, including higher education. Retirement and fringe benefits costs now eat up about 80 percent of the flexible dollars in higher education. The Commissioner also mentioned the United Way Education Excellence Summit on November 30, where he served as a panelist. He remarked that United Way had been quite engaged in advocating an educational agenda.

Legislature. Dr. Sederburg reported that legislative conversations had been held at UVU, Weber, and Utah State University. A meeting was held at SkyWest on January 7 for the southern Utah legislators, at the Little America on January 13 with the Salt Lake County delegation, and a meeting will be scheduled at Snow College for the rural Utah legislators. The Commissioner asked everyone to mark their calendars for the 2011 Higher Education Day

luncheon, to be held February 28 in the Capitol Rotunda.

UESP and UHEAA Updates. Commissioner Sederburg reported that UESP and Zions Bank had recently sponsored a bookmark contest for school children. The winners each received a $1000 gift certificate for a UESP account. Zions Bank will donate $25 to each new account. Director Lynne Ward reported that UESP accounts were up to $3.6 billion, and that $33 million had been received since the Monday of Thanks-giving week. Director Feitz reported that students could now apply online for a Regents' Scholarship. To date, nearly 300 applications had been received. He announced that UHEAA had been recognized for its "customer-friendly" approach.

Student Body Presidents' Trip to Russia. Joseph Watkins, Utah Student Association (USA) Coordinator, introduced a few student body presidents and USA officers, and asked them to report on their recent trip. The students thanked the Utah citizens for the opportunity to go to Russia on behalf of higher education. They were greeted by the President's National Security Council and briefed the President himself. The group also met with top government officials and Russian students to discuss their common dreams, common expectations, and common desires to learn. The students then responded to questions from Regents.

2010 Report of the 2020 Higher Education Plan

Commissioner Sederburg referred to Tab A. He reported the State Higher Education Executive Officers (SHEEO) organized had recognized our innovative web site. The plan attached to Tab A was reviewed by several individuals and organizations outside of Utah. In the Regents' joint meeting with the State Board of Education in January, this document will make a strong statement about college readiness. He pointed out the major changes since the previous Board meeting: (1) The plan created a synergy between K-12, higher education, UCAT, business and industry, the Department of Workforce Services (DWF) and state agencies and is being accepted as a state goal. (2) An emphasis was added on competency/outcomes-based education. (3) An alignment was recognized between higher education and the talent force needs of the state. (4) Because of its clear statements about expectations of the institutions and expectations to facilitate that future, this document is considered a social contract.

When asked about a future work plan, Regent Zenger said the Regents are statutorily required to have a plan for higher education in Utah. He expressed his great pleasure in the progress being made, the data of the plan, and the enormous amount of work that went into its production. The process has been very open to the public and involved the institutions along the way. Commissioner Sederburg said, at the request of Regent Zenger, his staff had identified the top priorities for the coming year. Those were identified in the plan with a star (★).

Associate Commissioner Martin said the plan was to spark dialogue, which it had done, with legislative groups, Regents, presidents, and the general public. Through that process, the staff has gained insights and ideas. He thanked the Regents for their involvement. This is an annual process, with an updated report to be submitted every year. Commissioner Sederburg summarized several of the ideas. One was to give more attention to scholarships for college juniors and seniors. This would help with the Regents' goal of completion. Another suggestion was for the state to create a college where students could work their way through by working for their tuition. Other interesting ideas were received as well. He thanked Regent Zenger, Associate Commissioner Martin, and others who were identified on page 80 of the report.

Chair Jordan noted 23 items had been indicated with a star. Realistically, this should be shortened to one or

two major items. The plan needs an educational focus so presidents can direct institutional resources appropriately. He asked the presidents to look at the items indicated as priorities and report back to the Regents on what they think their institutions can best focus in the next year. This will be a focus of the January meeting with the State Board of Education. The presidents were asked to comment, to which they responded they appreciated the request being reviewed by the institutions. President Albrecht recommended that, in addition to identifying issues that can be accomplished on an institutional level, they should also identify the issues on which the institutions could work in common.

Regent Karras pointed out the plan should have a fiscal note. People need to know what it will take to accomplish these goals. The state needs to support this effort with funding as well as lip service. Chair Jordan referred to the Action Plan beginning on page 45 and asked that fiscal notes be added for all priority items, both at the institutional and system levels. Chair Jordan said he hoped for a very open discussion with the Legislature. He asked the presidents when they could realistically come back and report on their priorities. Most presidents recommended the reports be given at the March Board meeting.

President Bioteau remarked that the presidents agreed that for new goals to be integrated into the institutions, the presidents need time to work with faculty and staff to implement the agenda. She said this needs to be deeply embedded within the system and each institution. Chair Jordan asked the Commissioner to follow up with the presidents. One of the focus areas of the March meeting will be the development of an action plan coming forward from the institutions. In the January meeting, the group will talk about one or two goals on which the Regents can work collaboratively with the State Board of Education. Commissioner Sederburg said the institutions were already heavily engaged. He said the goals should focus on retention and degree completion. Chair Jordan pointed out that retention at the University of Utah is very different from retention at Salt Lake Community College because of their differing missions.

Regent Brown asked if the various institutions knew how much of the expected student growth would be coming to their respective institutions. Chair Jordan said this was a ten-year plan. Institutional missions begin that process. Commissioner Sederburg pointed out some elements of the plan fit together nicely, such as mission-based funding for the institutions. Regent Marquardt agreed with being realistic and providing an anticipated cost. He said the Governor and Legislature need to know this will cost a lot of money and to start planning where they could get it. Regent Zenger clarified: The institutions will come back with more realistic issues that can be accomplished on their campuses with an expected price tag. Assistant Commissioner Martin said existing resources should be included.

Regent Zenger moved formal approval of the Higher Education 2020 Plan. Vice Chair Beesley and Regent Davis seconded the motion, which carried unanimously. Chair Jordan thanked Regent Zenger and everyone who was involved in preparing the plan.

Institutional Technology Reports

Chair Jordan recognized and welcomed Senator Steve Urquhart, who was recently selected as a co-chair of the Higher Education Appropriations Committee. Commissioner Sederburg noted Senator Urquhart would sponsor proposed legislation on mission-based funding. The Commissioner thanked Senator Urquhart for attending the meeting. The Senator said he was very honored to serve as one of the two chairs of the Higher Education

Appropriations Subcommittee. The work of education is very important to the future of this state. He said he was looking forward to working with the Regents and Presidents. President Wyatt introduced Dr. Gary Smith, the new Provost at Snow College.

In the previous Board meeting, Dr. Steve Hess presented a report on behalf of the system Institutional Technology Task Force. At this meeting, Chair Jordan asked the presidents to report on specific successes/ challenges relating to information technology at their respective institutions. In general, he asked the Regents to be thinking about how to partner with the K-16 Alliance using this technology, in order to have a better-prepared set of seniors graduating from high school. Institutional reports were given in the following order: Salt Lake Community College, Snow College, Dixie State College, Southern Utah University, Utah Valley University, Weber State University, Utah State University, and the University of Utah. During the discussions, Regent Zenger asked President Nadauld to talk about the costs of developing technology and Dixie's partnership with the University of Utah on course content.

Chair Jordan thanked the presidents for their presentations. He asked the Regents and Presidents to consider the following questions:

1. How do we use technology to increase our capacity utilization?
2. How do we improve our faculty-to-student ratios?
3. How do we use technology to improve access, completion, retention?
4. How do we use technology to improve quality instruction?
5. What are we doing to help students save money?
6. How do we share best practices?

President Wyatt added this question: How do we transfer money from capital budgets to operating budgets? Regent Karras pointed out we need a uniform way to measure this on a system level. Regent Zenger suggested a common nomenclature. Commissioner Sederburg said knowing the cost of technology support required on our campuses would also be very valuable.

The Regents recessed to lunch and their respective committees at 12:20 p.m. Following meetings of the Board committees, the Regents reconvened in Committee of the Whole at 1:40 p.m.

Legislative Priorities

Associate Commissioner Buhler referred to Tab N and reviewed appointments of legislative leadership and key committee appointments. He also remarked on the changes in institutional legislative liaisons. He also reported on the budget environment. Regent Atkin moved that the Board adopt the key recommendations in Tab N. Regent Pitcher seconded the motion, which carried unanimously.

Reports of Board Committees

Program and Planning Committee (Regent John H. Zenger, Chair)

Utah Valley University – Bachelor of Science Degree in Geomatics (Tab C). Chair Zenger explained that Geomatics was the study of geospatial science, a subset of earth science, the study of geospatial measurement and representation including several disciplines. Geonomics was formerly known as professional surveying, which is still included in the program, along with measurement. Research has shown that this is a growing profession and will have a positive effect on the economy. Chair Zenger moved approval of UVU's request for a Bachelor of Science Degree in Geomatics. Regent Snow seconded the motion.

Utah Valley University – Bachelor of Social Work (Tab D). Chair Zenger reported UVU had included an emphasis in Social Work in its Behavioral Science degree. If the Regents approve this program, the Social Work Emphasis will be discontinued. Of the 609 BSW programs in this country, the Social Work emphasis is the second largest of the five emphases in the UVU Behavioral Science Department with 376 students. There is high student demand for the BSW program because of the advantages in securing employment. University officials reported an increased demand for this program. Chair Zenger moved approval of UVU's request for a Bachelor of Social Work program. Regent Snow seconded the motion.

Utah State University – Doctor of Veterinary Medicine Degree in Partnership with Washington State University (Tab E). Chair Zenger explained that Utah State University proposed a partnership with the Washington State University for a 2+2 doctorate program in veterinary medicine. The Program Review Committee (PRC) and the Commissioner's staff did extensive work in determining whether the program met the requirements of policy R401. The committee moved to accept the proposal, contingent on the Legislature providing state funding. Chair Zenger moved approval of the partnership between Utah State University and Washington State University for a Doctor of Veterinary Medicine Degree. Regent Snow seconded the motion.

Chair Jordan asked Vice Chair Beesley, as chair of the PRC, to review the work of the committee. After a brief summary, Regent Beesley explained that significant program requests require a significant amount of effort on the part of staff. She thanked Commissioner Sederburg, Associate Commissioner Hitch, and Assistant Commissioners Safman and Wixom. Vote was taken on the motions to approve the previous three agenda items, and it was adopted unanimously.

Finance and Facilities Committee (Regent Nolan E. Karras, Chair)

Utah State University – Property Purchase in Brigham City (Tab F). Chair Karras reported that Utah State University had requested approval to purchase approximately 40 acres of land in Brigham City, which includes the former Intermountain Indian School property and two smaller improved-commercial parcels contiguous to the property owned by Utah State University. The University expressed a desire to acquire an appropriate area of the land for future campus development because of increasing concern about how to address the long-term growth and functional needs of the Brigham City Campus. The proposed source of funding for the purchase is tuition and fees collected from Utah State University Regional Campuses and Distance Education students. Operation and Maintenance costs, for the foreseeable future, will be funded from the same source. Once a master plan for the property has been completed and qualifying buildings have been identified, Utah State University may request state-appropriated O&M for the eligible projects. Upon motion by Regent Karras and second by Regent Holbrook, the Board approved the transaction unanimously.

Southern Utah University – Office Space Lease (Tab G). Chair Karras explained that University officials hoped to lease the recently renovated Cedar City library for University use. The 11,705-square-foot space is located very close to the campus and has been offered to the University for a very reasonable rate. The property. Relevant terms of the lease were shown on the Commissioner's cover memo. Chair Karras moved approval of the proposed lease, seconded by Regent Holbrook.

University of Utah – Utah Food Association Building Purchase (Tab H). The University of Utah requested authorization to purchase the Utah Food Association Building in Salt Lake City for programmatic use by the University Neighborhood Partners. The University will purchase the property with donated funds. Details were included with the agenda. Chair Karras moved the authorization of the purchase agreement for the negotiated price of $450,000, with the understanding that the funding will come from the proposed sources. Regent Holbrook seconded the motion.

Salt Lake Community College – South City Campus Property Purchase (Tab I). Chair Karras pointed out that SLCC officials had been trying to purchase the property in question for 18 years because of its strategic value to the campus. College officials were able to negotiate the purchase price at $400,000, which is $20,000 greater than its appraised value but a reduction of $100,000 from the previous asking price. The building on the property will be demolished and the existing billboard removed. The owner requested that this transaction be completed before the first of January. Details were listed in the Commissioner's cover memo and attached letter from SLCC Vice President Klaus. Chair Karras moved approval of the property purchase with the stipulation that the $20,000 amount over appraised value must come from non-appropriated, non-student fee sources. The motion was seconded by Regent Holbrook.

Utah Valley University – Peer Institutions List (Tab J). The Commissioner's Office is in the process of working with USHE campuses to update their lists of peer institutions. Because of the evolving missions of the institution, it is necessary that peer groups represent the nature and mission of the USHE institutions to which they are compared. UVU officials and the Commissioner's staff have collectively agreed upon the proposed peer institutions list. Chair Karras moved approval of the UVU Peer Institutions List, seconded by Regent Holbrook.

Vote was taken on the previous four agenda items. The items were unanimously approved.

UHEAA – Approving Resolution, SBR Student Loan Revenue Bonds (Tab K). Chair Karras explained that this was an approving resolution to refinance existing bonds. This proposal is for $390 million; another proposal will be presented in January after negotiations with U.S. Bank. This package will give UHEAA more leverage in the future. The committee approved parts of the request. A key component of the overall plan was negotiation for a discounted bond purchase rate with the largest single holder of outstanding UHEAA Auction Rate Securities to generate sufficient equity to earn a AAA rating, fund contingency reserves, and provide for limited asset extraction. UHEAA was also able to "swap" variable rate bonds for fixed-rate bonds. Chair Karras commended Executive Director Feitz and Deputy Executive Director Davis for the well thought-out proposal. Chair Karras moved approval of the Approving Resolution, with a note that Section 5 on page 5 of the Resolution be corrected to "...on or before 20 years from the date of issuance..." Regent Atkin seconded the motion, which was adopted unanimously.

2011 Legislative Bonding Authorization (Tab L). Since the Board approved the list of non-state funded capital development projects in September, revised bonding amounts were identified on some of the projects. Those

revisions were listed and explained in the Commissioner's cover memo to Tab L. Chair Karras moved that the Regents ratify the revised list as the basis for USHE's bonding authorization request during the 2011 Legislative General Session. Regent Holbrook seconded the motion, which carried unanimously.

Operation and Maintenance Funding Request (Tab M). The 2010 Legislature prohibited higher education from asking for appropriation for O&M support for three non-state funded projects. Some of the projects were built with state-appropriated funds and others with bonding and donated funds. Three institutions (University of Utah's Eyring Chemistry Building Addition, Utah State University's Bottanical Center Classroom Building, and SUU's Southern Museum of Art) felt the need to have the projects move forward and agreed to forgo a request for the O&M funding. As a result, the statute authorizing constructions of these three projects included language that the institutions were not authorized to seek state-appropriated O&M. The action did not prohibit such funding for past projects that had not yet been funded or future projects awaiting consideration. As explained in the Commissioner's memo, the purpose of this request was to clarify relevant issues in order for the Regents to reinforce the need for this O&M funding. All of the projects at issue are among those included in the operating budget request approved by the Board in August. Variances from the original requests were shown in Tab M. Chair Karras moved approval of the revised recommended O&M requests as shown on page 2 of the Commissioner's memo, with verification by DFCM of the amounts for Utah State University's Equine Center and its Laub Athletics/Academic Complex. The motion was seconded by Regent Holbrook and carried unanimously.

General Consent Calendar

On motion by Regent Theurer and second by Regent Snow, the following items were approved on the Board's General Consent Calendar (Tab O):

A. Minutes – Minutes of the Regular Board Meeting held October 30, 2010 at the University of Utah in Salt Lake City, Utah

B. Grant Proposals (On file in the Commissioner's Office)

C. Awards

1. Utah State University – Missile Defense Agency; "Unmanned Aerial Vehicles (UAV) Flight Test Center - Phase 1"; $2,484,000. Mike Fisher, Principal Investigator.

2. Utah State University – U.S. Department of Education; "ARRA: New Mexico K-3 Plus Extended School Year Validation Study"; $19,103,403. Cynthia Rowland, Principal Investigator; Damon Cann and Linda Goetze, Co-Principal Investigators.

3. Utah State University – U.S. Department of Education; "National Consortium to Broaden Access of Electronically-Mediated Education"; $1,027,749. Cynthia Rowland, Principal Investigator.

4. Utah State University – The Rural School and Community Trust; "i3 New Mexico K-3 Plus Extended School Year Validation Study (101008)"; $1,000,000. Cynthia Rowland, Principal Investigator; Damon Cann and Linda Goetze, Co-Principal Investigators.

5. University of Utah – U.S. Department of Energy/National Nuclear Security Administration; "NNSA-CO2 Tech"; $1,720,415. Philip J. Smith, Principal Investigator.

6. University of Utah – Defense Advanced Research Agency; "Non-linear GRSC Analysis"; $1,639,129. Carlos H. Mastrangelo, Principal Investigator.

7. University of Utah – Health Resources and Services Administration; "Advanced Nursing"; $1,425,600. Patricia A. Murphy, Principal Investigator.

8. University of Utah – Agency for Health Care Research and Quality; "Primary Care Practice Redesign"; $2,984,096. Michael K. Magill, Principal Investigator.

9. University of Utah – National Institutes of Health/National Center for Research Resources; "Mentored Scholars Cer"; $2,452,096. Carrie L. Byington, Principal Investigator.

10. University of Utah – National Highway Traffic Safety Administration; "NEMSIS Technical Assistance Center"; $1,500,000. Newell C. Mann, Principal Investigator.

11. University of Utah – National Institutes of Health/National Institute of Neurological Disorders and Strokes; "Glial Progenitor Cells"; $1,249,174. Linda L. Kelley, Principal Investigator.

12. University of Utah – U.S. Department of Energy; "Unconventional and Renewable"; $3,500,000. Christopher R. Johnson, Principal Investigator.

13. University of Utah – National Institutes of Health/National Center for Research Resources; "Bioelectric Field Modeling, Simulation and Visualization"; $1,158,691. Christopher R. Johnson, Principal Investigator.

Report of the Chair

Next Meeting. Chair Jordan reminded Regents that the next Board meeting would be held on January 21, 2011, at the SLCC Redwood Campus. The Board will have its regular meeting in the morning, then meet jointly with the State Board of Education in the afternoon.

Chair Jordan expressed his appreciation for all of the enlightening information technology presentations. He urged the Regents to bring the Legislature's attention to those presentations. He further asked how the system could facilitate a sharing of best practices and collaboration among the institutions. President Benson acknowledged he had no idea what was being done on the other USHE campuses.

Resignation of Regent Cespedes. Chair Jordan announced that Regent Cespedes had accepted a position to join the faculty at Dixie State College, beginning in January. This will be a wonderful opportunity for her and for Dixie. However, that change has necessitated her resignation from the Board of Regents. As a result, this was her last Board meeting as a Regent. Chair Jordan congratulated Regent Cespedes and wished her well in her new position. Regent Cespedes said she had mixed feelings about the move. She was very excited about going to Dixie but sad that meant she had to resign as a Regent. She called her five years on the Board a great experience. She

said she would also teach sometime at SUU. Chair Jordan told her it had been a personal privilege to work with her on the Board and on the PRC. She has been able to make unique contributions to the Board because of her expertise in higher education. Regent Cespedes received a standing ovation of appreciation.

Adjournment

Regent Snow moved that the Board move into executive session to discuss personnel issues, specifically the recent Resource and Review Team visits. Regent Atkin seconded the motion, which carried. The Committee of the Whole recessed at 2:24 p.m. The Board then met in executive session and adjourned from there at 4:10 p.m.

Joyce Cottrell CPS, Executive Secretary

Date Approved

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January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: College and Career Readiness Statement – Information Item

Issue

To meet Utah's education and workforce needs, the Board of Regents and Commissioner of Higher Education has set a big goal for Utah: to have 66% of Utahns—men and women age 25 to 64—with a postsecondary degree or certificate by the year 2020; specifically, to have 55% of Utah's workforce with an associate's degree or higher and 11% with a postsecondary certificate that leads to a livable wage. The Utah K-12 students, their parents, teachers and counselors can be assisted by having a clear, written statement that lays out expectations for student performance during the K-12 years which will contribute to student success in post-secondary certificate and degree programs.

Background

To achieve Utah's big goal, the state must address three strategic priorities, one of which is increasing the rate of student participation in higher education (postsecondary education programs). This includes enrolling more and better-prepared students in college directly from high school. It also means increasing the participation rate of returning adult learners from across all regions of the state.

Research clearly shows that "...the challenge of improving the college-going rate can be traced to two key difficulties. First, students must be academically prepared for college by 12th grade. The opportunities to academically prepare for college narrow as students progress through high school. If students do not start taking college preparation courses in the 9th grade, they will be less likely to enroll in college. In addition, students who are not reading or doing math at grade level will not be prepared for college level work." [1]

Staff of the Utah State Office of Education (USOE) and the Office of the Commissioner of Higher Education have worked collaboratively to develop a written statement describing actions students should take during their K-12 educational experience-= particularly in the high school years - to be college- and career-ready. Multiple drafts have been prepared to respond to input from experts in Career and Technical Education

[1] The work of Adelman (1999), Cabrera and La Nasa (2001), Wimberly and Noeth (2005) in *Helping Students Navigate the Path to College: What High Schools Can Do,* September 2009, U.S. Department of Education

(CTE), counselors, higher education Chief Academic Officers, and others. The resulting statement is designed to be used by Utah parents, students, and K-12 personnel.

Policy Issues

The recommendations in this statement are written to assist all Utah K-12 students seeking post-secondary preparation. They are supported by research indicating K-12 student actions which make a difference in student success at the post-secondary level. In addition, the recommendations build upon the State Board of Education high school graduation requirements and take into account the recently adopted K-12 core curriculum standards.

Commissioner's Recommendation

The Commissioner recommends the Regents receive a briefing on the Career and College Readiness Statement and discuss it with the State Board of Education members during this joint meeting of the two boards. This statement will be presented for action by the Board of Regents at its March 2011 meeting.

William A. Sederburg, Commissioner

WAS/EJH

Utah State Office of Education and
Utah System of Higher Education

College and Career Readiness Recommendations to Middle and High School Students

December 2010

The Utah State Board of Regents and the Utah State Board of Education believe all students should have education and career goals that will prepare them to experience fulfilling lives, actively participate as educated citizens, and thrive in a particularly competitive and global marketplace. A college- and career-ready student is prepared to succeed in college and in postsecondary workforce training programs. The following are joint recommendations for students to be college- and career-ready:

To Be Ready for College and Careers, Students Should...

1. **Build an Academic Foundation:**
   - Take challenging classes in middle and high school to develop an understanding of different subjects and a solid academic preparation for college-level courses. *See College and Career Readiness Pathway suggestions on the second page.*
   - Take Advanced Placement (AP), International Baccalaureate (IB), or concurrent enrollment classes that lead to college credit and provide direct experience in college-level studies. Select concurrent enrollment classes that apply to general education, a certificate, or a degree that fits educational plans.

2. **Develop Intellectual and Career Capacity:**
   - Select courses in high school that challenge the intellect and develop critical thinking, analysis, and problem-solving strategies.
   - Practice creative problem solving, increase written and oral communication and teamwork skills and become technology proficient.
   - Establish time management and study habits to prepare for the greater amount of independent work required in college.

3. **Evaluate Progress for College:**
   - Do the very best academic work possible in every class taken from middle school through the senior year of high school.
   - Speak with a counselor about your course choices; ask for advice on enhancing college readiness skills.
   - Throughout the middle and high school years, use external methods (such as the EXPLORE, PLAN and ACT sequence of tests, or Accuplacer) to determine how close you are to being ready for college.
   - Adjust study habits and school course choices appropriately to address weaknesses and stay on track.

4. **Explore Postsecondary Options:**
   - Visit at least one college campus; take a guided tour, and ask questions.
   - Learn how much college costs. Submit the Free Application for Federal Student Aid (FAFSA) by the priority deadline. Ask a Financial Aid advisor about scholarships, grants, loans, and work study.
   - Complete the steps necessary for college entry: take a college entrance exam (ACT or SAT) and submit an admission application by the priority deadline.

(Turn to the second page for course selection guidance)

High School Course Selection Recommendations

	High School Graduation*	College and Career Readiness Pathways		Regents' Scholarship**
	State Graduation Requirements (effective Fall 2011)	1- & 2-Year Certificate and Degree Pathway	2-Year Transfer and 4-Year Degree Pathway	Course Requirements
English/ Language Arts	**4.0 credits**	Concentrate on developing technical reading, writing and research skills.	Concentrate on developing reading, writing and research skills.	4.0 credits of English**
Mathematics	**3.0 credits** 1.0 credit Algebra I 1.0 credit Geometry 1.0 credit Algebra II *Mathematics course titles will change to Common Core Mathematics titles for 9th graders in Fall 2011.*	Take required Mathematics courses and focus on the application of math concepts related to the chosen career goal in your Student Education Occupation Plan (SEOP).	Take a Mathematics class in the senior year. Students interested in STEM degrees should take at least one Mathematics course beyond Algebra II.	4.0 credits of progressive Mathematics (Algebra I, Geometry, Algebra II) and one class beyond Algebra II. *For the graduating class of 2015, students will take the Common Core and one additional progressive course.*
Science	**3.0 credits** 2.0 credits from the four science foundation areas: Earth Systems, Biological Science, Chemistry, or Physics 1.0 credit from the foundation courses or the Applied or Advanced Foundation science core list	Three credits of Science will prepare you for college. Choose foundation, applied, or advanced courses aligned with your SEOP goal.	Three credits of Science will prepare you for college. Choose foundation, applied, or advanced courses aligned with your SEOP goal. Students interested in STEM degrees should take 4 credits of Science.	3.0 credits of lab-based Science courses to include one each of Biology, Chemistry and Physics
Social Science/ Social Studies	**3.0 credits** 1.0 credit U.S. History 0.5 credit Geography 0.5 credit World Civilization 0.5 credit U.S. Government and Citizenship 0.5 credit General Financial Literacy	Select Social Studies classes that provide the strong academic foundation but also enable you to explore a variety of career paths.	Select Social Studies classes that provide the strong academic foundation but also enable you to explore a variety of career paths.	3.5 credits of Social Science**
Directed Coursework	**3.0 credits** 1.5 credits Fine Arts 1.0 credit Career and Technical Education 0.5 credit Computer Tech	Choose electives that concentrate in a pathway that meets your high school graduation requirements and provides depth (two or more courses) in an area of interest.	Choose directed coursework associated with your career path. CTE and fine arts courses allow you to explore these areas. Take a challenging computer technology course to prepare for college-level projects.	
Physical Education/ Health	**2.0 credits**	Build a foundation for a healthy lifestyle that is key to college and career success.	Build a foundation for a healthy lifestyle that is key to college and career success.	
Required Electives	**6.0 credits**	Select electives that focus on your SEOP goal and chosen Pathway.	Take challenging courses through the senior year.	
World Languages			Take 2.0 credits of the same World Language, other than English, in a progressive manner during grades 6-12.	2.0 credits of the same World Language, other than English, taken in a progressive manner during grades 9-12.
District Requirements	varies by District	Meet your district's requirements for graduation.	Meet your district's requirements for graduation.	

* For more information on Utah High School Graduation Requirements, visit http://schools.utah.gov/curr/main/GradInfo.htm

** For list of courses that satisfy Regents' Scholarship requirements, see http://www.higheredutah.org/scholarship_info/regents-scholarship/

See college and university websites for additional financial aid and scholarship opportunities.

January 13, 2011

MEMORANDUM

TO: Utah State Board of Regents

FROM: William A. Sederburg

SUBJECT: Utah Data Alliance and State Student Identifier Update

Issue

Provide an update regarding the status of the Utah State Longitudinal Data System (SLDS) funded through an American Recovery and Reinvestment Act (ARRA) grant that was awarded in May 2010 and runs until June of 2013. This grant provides the funding necessary for the creation of the Utah Data Alliance (UDA).

Background

The Utah Data Alliance (UDA) is a cooperative initiative between the Utah State Office of Education (USOE), Utah System of Higher Education (USHE), Utah College of Applied Technology (UCAT), and the Utah Division of Workforce Services (DWS), with support from the Utah Educational Network (UEN) and the Utah Educational Policy Center (UEPC). UDA is currently in the process of filling many of the key positions that are required to begin the designing, building, and implementation of a longitudinal data system. Members of the UDA management team currently meet on a weekly basis.

Purpose

The purpose of this data system is to conduct meaningful longitudinal research on student cohorts that will inform education, workforce and state policy stakeholders. The UDA will be able to address research questions in the areas such as remediation, retention, and workforce impact and alignment. The UDA will also be an excellent resource for other grants that require cohort tracking from K-12 to postsecondary education to the workforce. The UDA is for research and reporting purposes summary data only and will not be used to track or advise individual students.

Commissioner's Recommendation

This item is for information only

_____

William A. Sederburg, Commissioner

WAS/CKM/JAC
Attachments

Utah Data Alliance (UDA)

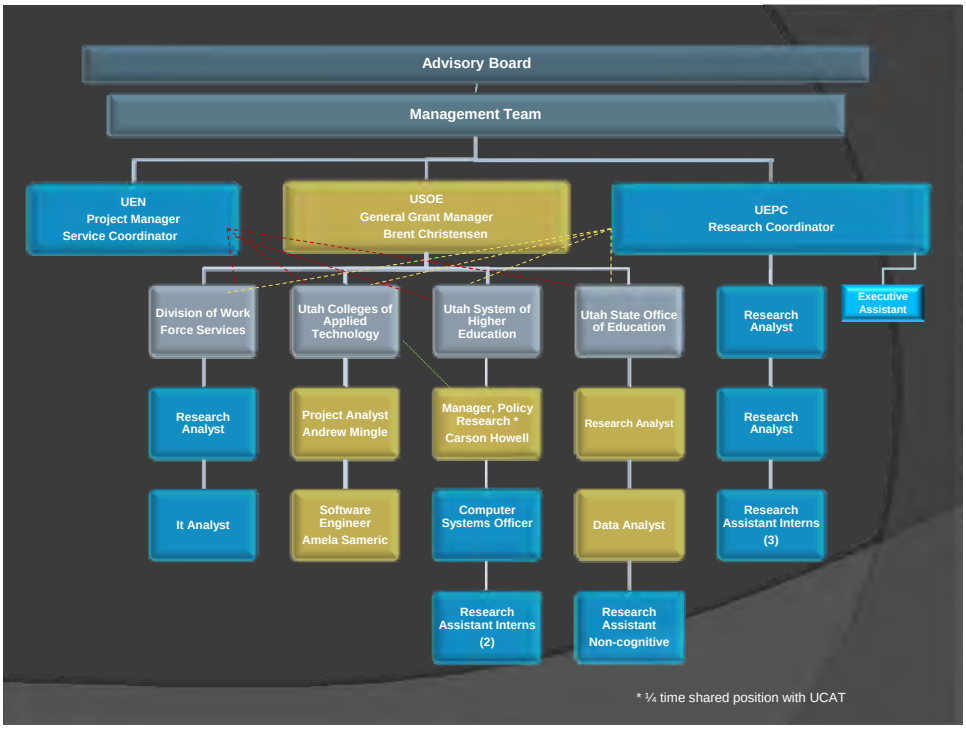
- SLDS Grant
  - State Longitudinal Data System
  - Thru June 2013
- Beginning operations Fall of 2011
- Research Purposes
  - Not a student tracking/advising system
  - Cohort based – pipeline studies

Advisory Board

- Utah State Office of Education
  - Superintendent Larry Shumway
- Utah System of Higher Education
  - Commissioner William Sederburg
- Utah College of Applied Technology
  - President Robert Brems
- Utah Division of Workforce Services
  - Richard Little
- Utah Educational Network
  - Director Michael Peterson
- Utah Educational Policy Center
  - Director Andrea Rorrer

Management Team

- Utah State Office of Education
  - John Brandt, Information Technology Director
- Utah System of Higher Education
  - Joseph Curtin, Dir. of Inst. Research & Analysis
- Utah College of Applied Technology
  - Andrew Mingle, Project Analyst
- Utah Division of Workforce Services
  - Steve Maas, Manager MIS
- Utah Educational Policy Center
  - Andrea Rorrer, Director UEPC
- Utah Educational Network
  - Bryan Peterson, Associate Director Technical Services



UDA Update

- Hiring process is continuing
- Adopted - Common Educational Data Standard for SLDS data elements (CCSSO, SHEEO, NGA, Gates Foundation)
- Research Agenda is being discussed
  - Policy questions (e.g. remediation, retention, etc.)
  - Data driven decision making
  - Support data needs for other grants
    - Perkins/ TRIO/ Rigorous Study (CTE Grant)

State Student Identifier (SSID)

- SSID Required by state statute
- Standard statewide student records and eTranscripts are critical for good UDA data
- Provides linkages between K-12, postsecondary and workforce data

State Student Identifier (SSID)

- Districts without the SSID on transcript were identified and the omission corrected
- Verifying the placement and labeling of the SSID on the transcript
- USHE Records with missing data are being submitted to USOE from USHE for matching and updates.

State Student Identifier (SSID)

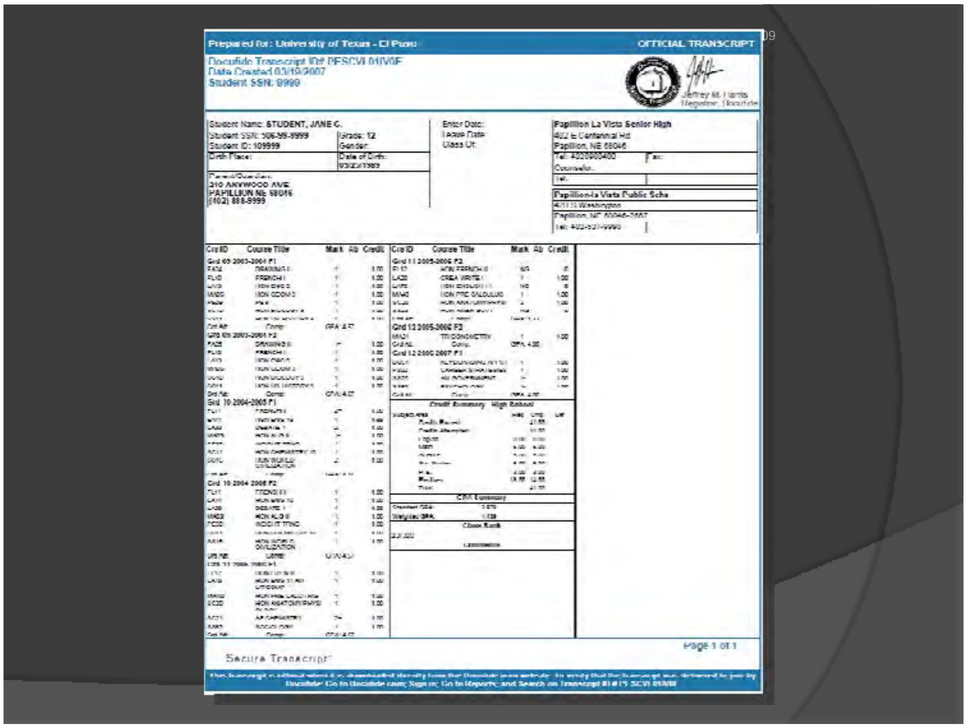
- Not all postsecondary institutions require a high school transcript
- SSID not known by most students
  - Confused with LEA (lunch) number or SSN
- Postsecondary application process
- Waiting for consistency and automation of electronic transcript
  - Uniform PDF
  - Automated electronic student record

UTREx
(Utah Transcript and Record Exchange)

- Uniform and efficient collection of detailed student records by USOE from public districts and charters
- Timely and automated transfer of student records between districts and charters
- Standard and automated availability of electronic high school transcripts

UTREx
(Utah Transcript and Record Exchange)

- Scheduled complete date - October 2011
  - Pilot with representative districts scheduled for spring 2011
- Transcript can be sent to most postsecondary institutions in the country
  - Paper
  - PDF
  - Automated electronic student record


Prepared for: University of Texas - El Paso

OFFICIAL TRANSCRIPT

Student Name: STUDENT, JANE C.

Student SSN: 506-99-9999 | Grade: 12

Student ID: 109999 | Gender:

Birth Place: | Date of Birth:

210 ANYWOOD AVE

PAPILLION NE 68046

(402) 888-9999

Enter Date:

Leave Date:

Class Of:

Papillion La Vista Senior High

402 E Centennial Rd

Papillion, NE 68046

Counselor:

Papillion-la Vista Public Schs

Secure Transcript

Page 1 of 1

UTAH SYSTEM OF HIGHER EDUCATION
Building a Stronger State of Minds℠

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60 South 400 West
Salt Lake City, Utah 84101-1284

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Fax 801.321.7199
TDD 801.321.7130
www.utahsbr.edu

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: K-16 Alliance – Information Item

Issue

The K-16 Alliance has been in existence for five years. The collaboration between the schools and agencies in the K-12 and higher education systems have benefitted from this formal structure to address common issues. Experience over the past five years suggests that a more streamlined committee structure will be better able to focus on and address the most pressing current issues in achieving the Utah State Board of Education (SBE) "Promises to Keep" initiative and the closely aligned Board of Regents (SBR) "Higher Education Utah 2020" strategic plan.

Background

The K-l6 Alliance was established in 2006 with representatives from the Utah System of Higher Education, State Board of Regents, State Board of Education, Utah State Office of Education, the Governor's Office, and the Utah State Legislature. The overarching vision of the Alliance is to more nearly approximate a system approach to education in Utah, from kindergarten through post-secondary education. The major objective of the Alliance is to establish a working relationship and processes that minimize boundaries between K-12 and post-secondary education. The Alliance seeks to maximize the number of students graduating from secondary schools, successfully making the transition into postsecondary education, and completing a post-secondary certificate or degree. The focus of this organization is on alignment and quality.

When the K-16 Alliance began in 2006, affiliates of the Alliance were identified consistent with the issues of the day. Since 2006, state and national changes and trends have appropriately changed or modified the work of the affiliates. The most appropriate structure for the present day is represented in the attached materials and recommends the following:

(1) Continuation of the Concurrent Enrollment, Teacher Education and Work Force subcommittees;
(2) Continuation of the Retention subcommittee until its work concludes with the issuance of a White Paper (projected for completion in Spring 2011);

(3) Creation of a combined committee for issues on Curriculum and Assessment and Developmental/Remedial issues (with the USOE Math and Language Arts Advisory Task Forces affiliated with this committee);
(4) Addition of the College Access Network of Utah (CANU) as an affiliate of the K-16 Alliance (with some restructuring of the existing CANU to make it more broadly representative across K-16).

Policy Issues

Staff of the Utah State Office of Education (USOE) and the Office of the Commissioner of Higher Education (OCHE) have carefully reviewed the work of the K-16 Alliance to date and are recommending this more streamlined organization to more effectively address the goals and objectives common to the USOE "Promises to Keep" plan and the USHE "Vision 2020" strategic plan.

Commissioner's Recommendation

The Commissioner recommends the Regents receive a briefing on the K-16 Alliance re-organization, discuss it with the State Board of Education members during this joint meeting of the two boards, and endorse the proposed new structure.

William A. Sederburg, Commissioner

WAS/EJH

Attachment

K-16 ALLIANCE ORGANIZATION

JANUARY 2011

ALLIANCE CO-CHAIRS
David Jordan: Chair, State Board of Regents
Debra G. Roberts: Chair, State Board of Education

ALLIANCE MEMBERS

Governor's Office
Gary R. Herbert, Governor
Christine Kearl, Education Director

State Representative
Merlynn T. Newbold, Appropriations Chair (Invited)

State Senator
Stephen Urquhart, Appropriations Co-Chair (Invited)

Superintendent's Office
Larry Shumway, Superintendent
Brenda Hales, Associate Superintendent
Judy Park, Director of Assessment and Accountability

Utah System of Higher Education
William A. Sederburg, Commissioner
Elizabeth J. Hitch, Associate Commissioner

Utah College of Applied Technology
Rob Brems, President
Jared Haines, Vice President of Instruction

State Board of Education and State Board of Regents
TBD
Carol Murphy
Megan Holbrook
TBD

State Board of Education
TBD
Mary Shumway, CTE Director

State Board of Regents
Bonnie Jean Beesley

UCAT Board of Trustees
Tom Bingham

K-16 OVERSIGHT COMMITTEE
Christine Kearl: Governor's Office
Brenda Hales: Utah State Office of Education
Judy Park: Utah State Office of Education
Elizabeth J. Hitch: Utah System of Higher Education

K-16 Alliance Subcommittees

Curriculum and Assessment Developmental/Remedial
Teddi Safman, Co-Chair
Judy Park, Co-Chair

Current Task Force Activities for 2010-2011
USOE Math Advisory
USOE Language Arts Advisory

College Access Network of Utah (CANU)
Melissa Miller Kincart, Co-Chair
TBD

Concurrent Enrollment
Moya Kessig, Co-Chair
Cyd Grua, Co-Chair

Retention
Noelle Call, Co-Chair
Nate Southerland, Co-Chair
Concluding Work in 2011

Teacher Education
Teddi Safman, Co-Chair
Education Deans, Co-Chair

Work Force
Mary Shumway, Co-Chair
Gary Wixom, Co-Chair

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www.utahsbr.edu

January 12, 2011

MEMORANDUM

TO: State Board of Regents

FROM: William A. Sederburg

SUBJECT: Common Core Standards – Information Item

Issue

Utah is one of over 40 states and territories transitioning to an updated set of core standards for English Language Arts and Mathematics. The standards are rigorous and implementation of the curriculum and assessments that fit the standards will result in Utah students being well-prepared for college and career options following their work in the K-12 schools. Planning for the core standards has included many stakeholders, including significant input from USHE institutions.

Background

Sydnee Dickson, USOE Director of Teaching and Learning, will present background on the Common Core Standards and information on the implementation timeline and plans.

Policy Issues

This is an information item only. There are no policy issues.

Commissioner's Recommendation

The Commissioner recommends the Regents receive a briefing on the USOE Common Core Standards, and discuss it with the State Board of Education members during this joint meeting of the two boards.

William A. Sederburg, Commissioner

WAS/EJH

Attachment

Transitioning to the Common Core: A Multiple-Year Perspective

Successful, *sustainable*, implementation of the Common Core will require us to be relentless and strategic in focusing the entire palette of activities, structures, and resources available to us, including:

Common Core Academies

District/Charter Master Plan for Student Achievement and Professional Development

A collaboratively written School Improvement Plan

Principals embracing the role of instructional leader

Effective use of professional learning communities/ teacher collaboration

Productive use of teacher leaders, reading and instructional coaches, etc.

Planning and carrying out effective faculty meetings

Smart scheduling of specialists, media center, computer lab, etc.

Strategic use of paraprofessional time

Wise use of funds available for purchase of materials

All our activities, structures, and resources, such as those listed above, must focus on *and result in* a school culture in which the norm is
1) ongoing critical examination of student work by teachers, and the associated
2) ongoing critical examination and improvement of instructional practice.

Only this level of focus will result in achieving the goal of the Common Core:
ALL students college and career ready when they leave our K-12 system.

USOE *Suggested* Math Course Progressions

Based on USOE implementation schedule

This document provides guidance on student placement during the five years of Common Core Standards implementation. The first column describes a student's present grade and the second indicates his/her current mathematics assignment. Each subsequent column indicates a suggested student placement for the following years, given that the LEA is following the USOE recommended implementation timeline. Unshaded cells represent the 2007 mathematics core. Green cells represent Common Core courses. Red cells indicate when graduation requirements have been met.

For example, a current 7th grader enrolled in Math 7 will continue with the Utah Core by taking Pre-Algebra in 8th grade in 2011, followed by three years of common core curriculum, meeting current graduation requirements as a junior and preparing him/her to take a Precalculus level course or other elective as a senior.

LEAs may use this document as part of the SEOP process and to help make decisions regarding staffing and course offerings during the transitional years.

Please note this document does not provide guidance on supplementary mathematics courses or electives.

Elementary

Student's Grade Level in 2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015 Operational Test	2015 -2016
K	Kinder Math	1st Grade Math	CCSS2	CCSS3	CCSS4	CCSS5
1	1st Grade Math	2nd Grade Math	CCSS3	CCSS4	CCSS5	CCSS6
2	2nd Grade Math	3rd Grade Math	CCSS4	CCSS5	CCSS6	CCSS7
3	3rd Grade Math	4th Grade Math	CCSS5	CCSS6	CCSS7	CCSS8
4	4th Grade Math	5th Grade Math	CCSS6	CCSS7	CCSS8	CCSSI (9)
5	5th Grade Math	CCSS6	CCSS7	CCSS8	CCSSI (9)	CCSSII (10)
6	6th Grade Math	Math 7	Pre-algebra(8)	CCSSI(9)	CCSSII(10)	CCSSIII(11)
		Pre-algebra	Algebra(8)	CCSSIH (9)	CCSSIIH(10)	CCSSIIIH(11)

CCSS: Common Core State Standard course

Math Graduation Requirements Complete

Common Core State Standards (CCSS) Required Courses-Course Names May Vary

Common Core/Graduation Requirements Complete

November 17, 2010

Secondary

Student's Grade Level in 2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015 Operational Test	2015 -2016
7	Math 7	Pre-Algebra (8)	CCSSI (9)	CCSSII (10)	CCSSIII (11)	Precalculus, 1050/1060, or Math Elective (12)
	Pre-Algebra	Algebra (8)	CCSSIH(9)	CCSSIIH(10)	CCSSIIIH(11)	Calculus (12)
	Algebra	Geometry (8)	Algebra 2(9)	Precalculus (10)	AP Calculus (11)	AP Stat (12)
8	Pre-Algebra	CCSSI (9)	CCSSII(10)	CCSSIII(11)	Pre-calculus or 1050/1060 (12)	
	Algebra	CCSSIH(9)	CCSSIIH(10)	CCSSIIIH(11)	Calculus (12)	
	Geometry	Algebra 2 (9)	Precalculus (10)	AP Calculus (11)	AP Stat (12)	
9	Algebra A	Algebra B	Geometry	Algebra 2		
	Algebra	Geometry (10)	Algebra 2(11)	Precalculus, 1050/1060, or math elective (12)		
	Geometry	Algebra 2 (10)	Precalculus (11)	AP Calculus (12)		
10	Geometry	Algebra 2(11)	Precalculus, 1050/1060 or math elective(12)			
	Algebra 2	Precalculus (11)	AP Calculus (12)			
11	Geometry	Algebra 2 (12)				
	Algebra 2	Precalculus or 1050(12)				
	Precalculus	AP Calculus (12)				
12	AP Calculus					

Math Graduation Requirements Complete
Common Core State Standards (CCSS) Required Courses-Course Names May Vary
Common Core/Graduation Requirements Complete

November 17, 2010

CCSS Implementation Option for Small and Rural Schools

	2010-11	2011-12	2012-13	2013-14 Pilot assessment	2014-15 Operational assessment
5	5th Grade Math	CCSS6	CCSS7	CCSS8	CCSSI(9)
6	6th Grade Math	CCSS7	CCSS8	CCSSI(9)	CCSSII(10)
		CCSS7H	CCSS8H	CCSSIH(9)	CCSSIIH(10)
7	Math 7	CCSS8	CCSSI(9)	CCSSII(10)	CCSSIII(11)
	Pre-Algebra	CCSS8H	CCSSIH(9)	CCSSIIH(10)	CCSSIIIH(11)
8	Pre-Algebra	CCSSI (9)	CCSSII(10)	CCSSIII(11)	Precalculus or 1050
	Algebra	CCSSIH(9)	CCSSIIH(10)	CCSSIIIH(11)	Calculus
9	Algebra A	Algebra B	Geometry(11)	Algebra 2 or Elective	
	Algebra	Geometry (10)	CCSSIII(11)	Precalculus or 1050	
	Geometry	Algebra 2 (10)	Precalculus (11)	AP Calculus or Stat	

Math Graduation Requirements Complete
Common Core State Standards (CCSS) Required Courses-Course Names May Vary
Common Core Graduation Requirements Complete

January, 2010