Community and Technical College System
Mission Study Task Force

January 13, 2009, 1:00- 5:00 –ITV Meeting

Sites: Bellevue, Tacoma, Spokane Falls, Whatcom, SBCTC

AGENDA

1. Introductions by Site - *Jim Garrison*

2. Revised Work Plan. Review and discuss changes based on feedback from task force and SBCTC – *Jim Garrison and Jan Yoshiwara*
   - Revised Work Plan

3. Efficiency Analysis Work Plan.
   - Strategies to Maximize Student Achievement and Efficient Use of System Resources – Jan Yoshiwara
   - Summary of Good Policy and Practices

   Examples of Analyses in Progress
   - Administrative Areas to Address with Technology – Mike Scroggins
   - Considerations for Merging College Districts – Susan Howson
   - Matrix of Technical Degrees and Certificates

4. Needs of the Future Economy and Impacts on Size, Shape Direction of System – Grant Forsyth, professor of economics, Eastern Washington University
   - 20 Year Labor Market Outlook

5. Mission Driven Enrollment Forecast – Loretta Seppanen
   - Summary of State Enrollment Growth to 2028

6. Next meeting March 11, 1- 5 pm
   - Future – environmental scans
   - Millennial Students
   - Impact of technology on student learning and education delivery - Cable Green, SBCTC and Bob Kickner, Green River

Community and Technical College System Mission Study

Revised Work Plan
January 8, 2009

Goal

The purpose of this study is to:

- Understand how well the community and technical college system is serving the people of Washington State in all three mission areas: academic transfer, workforce education and basic skills
- Understand future needs and strategic challenges based on demographic, economic, financial and cultural trends over the next 20 years
- Identify emerging, effective means of delivering education to adults from our own experiences and from the successes of others
- Make policy recommendations to the State Board about the future size and shape of the college system, including principles about future investment of resources

Elements of analysis

Current and projected need:

- College attainment by region and county, age, race, income and mission area for Washington state adults
- Community and technical college participation by region and county, age, race, income and mission area
- Projected demand based on population forecasts to 2028
- Draw conclusions about who could be better served by the college system today and in the future

Mission area needs:

- Longer term economic and labor force trends in Washington State and the evolving skill requirements to meet the needs for a skilled workforce and a vibrant state economy
- Implications of current and projected needs for growth in academic transfer, workforce education and basic skills
- Implications for the role of community and technical colleges in upper division capacity and applied bachelor's degrees
- Draw conclusions about current and future needs for adult basic education, workforce education and academic transfer education and across regions of the state
- Draw conclusions about the role of community and technical colleges in bachelor's degree access, including expansion of community and technical college applied bachelor's degrees

Effectiveness issues:

- Technology trends, impact on teaching and learning
- Characteristics and learning styles of new, 21st century college students
- Examine how other state/countries and public and private institutions are responding to similar identified needs including strategies given limited resources
- Understand how limited financial resources can best respond to the identified needs
- Flexibility to respond to unknown futures and fostering innovation
- Draw conclusions about promising strategies that address broader student achievement within an environment of limited resources

Access issues:

- Transportation and location analysis based on the future distribution of the state population
- Role of eLearning in providing access to community and technical college education
- Draw conclusions about college locations, branch campuses and eLearning capacity

Process

Create system task force that includes State Board members, trustees, presidents, faculty and State Board staff

Coordinate efforts with the Higher Education Coordinating Board, Council of Presidents and Workforce Training and Education Coordinating Board

Timeline

September 2008	*Review study proposal with State Board, college system*
October	Organize system task force, undertake demographic analysis
October 22-23	*State Board meeting*
November 3	**Convene task force:** discuss study design, discuss context for future demand
November 6-7	WACTC meeting
November 14	TACTC Board of Directors meeting
December 3-4	*State Board meeting*
December 11-12	WACTC meeting
January 13, 2009	**Task force meeting:** discuss mission needs analysis, needs of the state's economy, efficiency analysis method
January 27-28	WACTC meeting
January 25-27	TACTC conference
February 4-5	*State Board meeting*
February 25-27	WACTC meeting
March 11	**Task force meeting:** discuss millennial students; discuss the impact of technology on student learning and education delivery
March 25-27	WACTC meeting
April 1-2	*State Board meeting*
April	**Task force meeting:** discuss transportation and location analysis; interim reports on efficiency analyses
April 30-May 1	WACTC meeting
May 6-7	*State Board meeting*
May	**Task force meeting:** receive efficiency analyses; discuss policies, strategies used to meet evolving and increasing needs for higher education
May 14-16	TACTC conference
May 28-29	WACTC meeting
June	**Task force meeting:** discuss overall findings and conclusions; draft recommendations
June 10-11	*State Board meeting*
July	**Task force meeting:** discuss final recommendations
July 22-26	WACTC meeting
September 14-16	*State Board retreat*

Mission Study Task Force
January 2008

Strategies to Maximize Student Achievement and Efficient Use of System Resources

The overall goal of the System Direction is to raise educational attainment for Washington's adult population.

The goal of this analysis is to identify the most promising strategies for maximizing opportunities by the college system for student access and achievement with fewer resources.

Criteria for Evaluating Strategies

1. Provide a short description of the purpose and features of the strategy.
2. What is the student impact of the strategy on access and achievement?
3. What is the financial impact of the strategy for colleges and for the system as whole?
4. Under what conditions would savings be realized, short term and long term?
5. What are the implementation issues, such as impacts on college accreditation, local community and political considerations?
6. What timeline is required for implementation?
7. What lessons have been learned in other states related to this strategy?

Strategies

Process:

January-May	Potential strategies developed and analyzed by system groups with support from State Board staff
April	Interim reports to Mission Study Task Force
May	Analysis and recommendations provided to Mission Study Task Force

Potential Strategies:

Education program delivery: eliminate unnecessary duplication of courses and programs; expand eLearning capacity; increase credits for prior learning; increase class size. *WACTC Education Committee*

Administrative functions: increase use of technology solutions. *WACTC Technology Committee*

Increase revenue: per credit tuition; Running Start funding; reduce tuition waivers; course and services fees; converting courses and programs to self-support. *WACTC Operating Budget Committee*

Governance: share functions regionally; merge college districts. *Mission Study Task Force*

Government accountability: budget provisos and earmarks; grant and plan requirements for targeted funds; travel to system meetings; program and financial audits; state government requirements for facilities, surplus assets, personal services contracts, and travel. *State Board staff, Commissions and Councils.*

Annotated Summary of *Good Policy, Good Practice*

Improving Outcomes and Productivity in Higher Education: A Guide for Policymakers

November 2007

By Patrick M. Callan, Peter T. Ewell, Joni E. Finney, and Dennis P. Jones

Summary Prepared by: Deb Stephens, SBCTC

Overview: The purpose of this paper is to provide policy leaders examples of experience from around the country to raise the higher education attainment of state residents even in the face of fiscal constraints. The paper provides specific examples of strategies, programs and practices to raise educational productivity by enhancing higher education opportunity, educational effectiveness and cost effectiveness. In addition, the paper describes the levers that policymakers can use to influence those improvements.

Part 1: Strategies for Increasing Educational Attainment

Annotations for Washington Policy or Practice as of 2009:

Statewide implementation or common practice at most colleges

Practice common for at least several colleges or state policy under consideration

Not a policy in Washington or a practice at few or no colleges

Strategy 1: Improve productivity in the Educational Pipeline

A. **Preparation of traditional age students (18 to 24)** by:

1) Increasing high school rigor by encouraging rigorous coursework in high school

Examples:

- **Indiana Core 40 Scholars Initiative** is a rigorous sequence of high school classes covering English, social studies, math, science, physical education, and electives.
- **Distance Delivery in South Dakota** offers advanced high school courses via distance delivery to small high schools throughout the state.
- **Middle College Charter High School** provides a personalized learning environment connecting high school students to the worlds of college and work.

2) Gauging college readiness by identifying gaps in preparation so they can address deficiencies while still in high school.

Examples:

- **California State University (CSU) Early Assessment Program** identifies college-level knowledge and skills and encourages high school juniors to participate in a voluntary assessment to determine their college readiness.
- **California Partne**participate in regional consortia to collect, analyze, and share data to evaluate: preparedness for the next level of education; number of students earning degrees; curriculum changes to improve student performance.
- **ACT Assessments** gives the ACT college entrance or assessment exams to high school juniors in 5 states so students can identify academic weaknesses and take courses in their senior year to improve college readiness.

3) *Enhancing Teacher Quality,* particularly as it relates to college readiness

Examples:

- **California State University (CSU) Early Assessment Program** includes a teacher-quality component allowing faculty members to identify student problems in writing and reading comprehension.
- **EveryTeacher,** South Dakota's Teacher Quality Enhancement Project, is a K–20 collaboration to increase the content knowledge and pedagogical skills of teachers.

4) *Encouraging Acceleration* by enrolling prepared high school students in college-level courses through Advanced Placement Policies and Dual Enrollment.

Advanced Placement Policy Examples:

- **Advanced Placement Incentive Program** in the Dallas Independent School District awards prizes to students (ranging from $100 to $500) for each AP exam on which they earn a score of three or higher.
- **Partnership for Minority and Underrepresented Student Achievement Act** in Florida helps students achieve passing scores on AP exams.

Advanced Placement Policy Examples:

- **Washington's Running Start** allows students to take college courses in high school.
- **College Now** at the City University of New York (CUNY) is the "largest public urban dual enrollment program" in the country.
- **Syracuse University's Project Advance (SUPA)** spans 134 high schools in New York, New Jersey, Maine, Massachusetts, and Michigan.
- **The Early College High School Initiative**, run by Jobs for the Future, helps to establish 250 small schools allowing students to earn a high school diploma and an associate's degree (or up to two years of college credit) in five years.

B. **Preparation of nontraditional college-age students** by encouraging adults to complete their high-school education and offering a specialized postsecondary curriculum targeted at those who have not recently participated in an educational program.

Examples:

- **Kentucky Adult Education (KYAE)** contracts with schools, colleges, and other organizations to encourage adults to complete high school and enroll in postsecondary education or to improve literacy.
- **The Integrated Basic Education Skills Training (I-BEST)** program teaches adults language and vocational skills simultaneously at community colleges in Washington.

C. **Persistence and completion of traditional college-age students** to ensure new students take a substantial number of credits early to improve their chances of completing a degree by developing learning communities and other ways of connecting students.

Examples:

- **It All Adds Up** allows freshmen at the University of New Mexico to join a math learning community and participate in peer advising.
- **Kingsborough Community College** in Brooklyn, New York, allows students to take linked courses as a cohort.
- **Broward Community College** allows incoming students to enroll in a 3-credit student success course in groups of 25 where "success coaches" work with students.

D. **Persistence and completion of nontraditional college-age students,** particularly low-income adults by:

1) Providing financial incentives.

Examples:

- **Opening Doors** in Louisiana targets low-income parents enrolled in community colleges
- **Lifelong Learning Accounts** in Illinois helps adult students finance their education by providing a match to student contributions using state funds.

2) Providing incentives for re-entry.

Example:

- **The University of New Mexico** created a pathway for former students, tracked down nearly 2,000 former non-completing students and attracted them back.

E. **Encouraging articulation and transfer** without repeating courses or losing time by providing common exams for basic skills, common cut scores for placement into college-level work, articulation agreements, and counseling and advising mechanisms and tools.

Guaranteed Admission Examples:

- **Florida** law guarantees admission to state universities to all community college AA graduates and has a common course numbering system and online student advising.
- **North Carolina** has an articulation agreement between the 2-year system and UNC, and has a general education core accepted across all higher education institutions.
- **Virginia's 2005 Restructuring Act** required four-year institutions to formalize or begin negotiating new transfer and articulation agreements with state colleges.

Proficiency Approach Examples:

- **City University of New York** requires students with less than 45 credits seeking admission to a baccalaureate program to demonstrate skills proficiency via standardized entrance tests or Basic Skills tests.
- **South Dakota** transfer students are required to take the same proficiency exam that is administered to all students in the four-year system.

Strategy 2: Redesign Policies to Enhance Educational Productivity

A. **Remove state subsidies from unproductive majors** to steer resources to the most efficient and productive academic programs.

Examples:

- **Ohio's Selective Excellence program** allowed institutions to earn additional discretionary resources when those resources increased investments in any one academic unit by more than the incremental increase in funds.
- **The Illinois Priorities, Quality, and Productivity (PQP) program** eliminated duplicative or unproductive programs based on guidelines for program productivity.

B. **Reengineer Curricula and Courses** by:

1) Redesigning the curriculum by:

- Establishing a 120-credit hour limit on degree requirements, with some exceptions
- Creating a core curriculum of specifically designed and aligned courses

2) Reengineering the delivery of large courses to incorporate technology at many institutions and for many courses and implemented at a system level.

C. **Target academic policies to improve quality and efficiency** by:

1) Reducing presenting the same material to the same students multiple times by:

- Reducing the time period for no-penalty drops, rather than allowing students to drop courses without academic penalty

- Limiting the number of times a student can enroll in the same course rather than allowing students to repeat completed courses for higher grades
- Counting all credits a student has enrolled in against the maximum number that will be underwritten with state funds.

2) Creating incentives for degree completion

Examples:

- **Oklahoma** rewards institutions for improving degree production.
- **The Missouri Funding for Results (FFR) program,** rewarded institutions for graduating students in selected fields and for those placing well on national exams.
- **Bundy Aid Program** in NY rewards institutions for graduating state residents.

D. **Create policies that reward demonstration of academic proficiency,** such as:

- *Allowing students to test out of courses and gain shortcuts to their degrees by:*
- *Allowing on-the-job learning to gain credits toward a degree*

Strategy 3: Use and expand facilities to meet state goals

A. **Ensure an adequate supply of undergraduate teaching**

Examples:

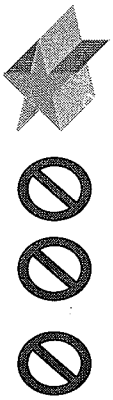
- **New Community College Systems in Kentucky, Indiana, and Louisiana** were created to enhance access for historically underserved populations.
- **Nevada State College** was created to accommodate enrollment growth at a per-student cost that was less expensive than the existing four-year institutions in the state.
- **Caps in Louisiana and Indiana** limit undergraduate enrollments in research universities and redirect those students to less expensive institutions.

B. **Promote collaboration among colleges and universities** to increase productivity by allowing residents in one area to access another institution's programs not offered locally.

Examples:

- **Oklahoma** established geographic "responsibility areas" where each institution identified unmet needs and responded to them by collaborating with other institutions.
- **North Dakota's** two-year campuses offer a joint degree program in nursing where participating institutions offer some courses, and the delivery site moves among campuses, so that the program is offered periodically in rural parts of the state.
- **Kentucky's** Jefferson Community College contracts with a neighboring college to offer health programs at that college, avoiding startup costs for the programs there.

C. **Support year-round operations** making better use of existing instructional resources by:
   1) Providing full subsidies for year-round study
   2) Providing concrete incentives for faculty to teach and students to enroll in slack enrollment periods, and
   3) Providing tuition discounts or bonuses for early degree completion



D. **Create new educational providers** based on an alternative model.
   Examples:
   - **British Open University (BOU)** uses a centralized model where full-time faculty develop centralized courses and assessment design and adjunct faculty teach.
   - **The Western Governors University (WGU)** allows students to demonstrate their college-level abilities at any time so they may progress, whether or not they have completed specific courses.

Part 2: Levers for Policy Leadership

A. Planning and Leadership that requires:
   1) Clarity and consensus of goals
   2) Persistence in making substantive changes
   3) Publicly reporting progress in attaining objectives
   4) Linking actions and results to objectives

B. Financial Policies

1) ***Allocations to institutions*** *that provide stability, protect base resources and provide for inflation.* Incentives should:
   - Reward institutions for courses completed
   - Increase the number of transfer students
   - Decrease the number of credits by graduating students
   - Allocate savings from productivity initiatives to fund further initiatives
   - Increase the proportion of credit hours generated through non-traditional means (OJT or testing out, for example)

2) ***Tuition policy*** *should create:*
   - Affordable tuition by linking charges to changes in family income
   - Refund policies discouraging students from dropping or adding courses
   - Policies that penalize students for enrolling for excessive credits
   - Rebates for students who take fewer than standard hours to graduate
   - Tuition policies to encourage summer or weekend enrollments

3) *Student **Financial Aid** should be targeted to*
   a. Avoid loans until students are in the last half of their academic program
   b. Provide increased financial aid for students completing an entire transfer curriculum or associate's degree before transferring
   c. Make college prep curriculum a condition for financial aid for high school students
   d. Ensure low-income students are a priority for financial aid
   e. Make aid available for part-time adult students
   f. Make the state responsible for distributing financial aid, not the institutions

C. Regulatory Policies should be analyzed to assess their impact of implementing strategies for productivity enhancements.

Examples:

- **Improve Productivity in the Educational Pipeline** by:
  - Limiting the number of state-sponsored credit hours required for a degree.
  - Encouraging the earning of credit through alternative means.
  - Requiring program review and assessments of content alignment.
  - Discouraging large numbers of course drops and adds.
  - Discouraging students from taking the same course multiple times with the intent of improving their grade point average.
  - Allowing remedial work to be tailored to specific student shortcomings.

- **Redesign State/Campus Policies to Enhance Educational Productivity** by:
  - Emphasizing completion of a degree, not time-to-degree
  - Making college-readiness expectations clear to high school students
  - Encouraging delivery of courses at times and places that meet student needs.
  - Removing barriers to articulation and transfer, and offering statewide transfer "guarantees" joint admissions between two and four-year institutions.

  Counterproductive regulatory policies are:
  - Prohibiting the combining of academic and vocational skills training.
  - Requiring that all institutional credits be earned "in residence."
  - Employing policies that value "seat time" over demonstration of learning.
  - Specifying maximum allowable credits earned by transfer, testing out, etc.

- **Use and Expand Facilities to Meet State Goals** by:
  - Constraining "mission creep.
  - Eliminating overly protective service area designations.
  - Allowing new nonpublic competitor institutions via program approval and financial aid policies.
  - Encouraging new institutions with alternative service delivery, particularly in high-demand fields.
  - Encouraging joint use of facilities.

D. **Accountability Reports** should communicate priorities related to broadening access, improving quality and reducing cost.

Examples:

- **Improve Measures of Access** by examining participation rates in relation to the base population each institution is charged to serve.
- **Construct Progression/Completion Measures** to show contributions to overall student flow at each stage of the postsecondary process, including entry, completing the first and second years of study, and completing a credential. Needed for this are:
  - *State student-unit record systems* from K–12 through postsecondary education and into the workplace or graduate study.
  - A *qualifications framework* defining generic skills standards across occupations and postsecondary credentials to ensure that they are aligned.
  - *Policy capacity* at the state level to convert data into metrics for tracking progress.
- **Improve Assessments of Direct Learning Outcomes** by:
  - Using the National Forum on College-Level Learning's three-part approach to collecting *statewide measures of learning* with these key elements:
    1. Results of national assessments of literacy administered to residents who graduated from college in the state.
    2. Additional assessments of student performance administered to samples of the state's about-to-graduate student population at two- and four-year institutions.
  - *Performance on professional licensure examinations and graduate admissions tests,* such as the Graduate Record Examination (GRE).
  - Ensuring that institutions have *quality-assessment policies* and use *outcome results* to improve programs by partnering with regional accrediting organizations.
  - Investing in *institutional assessment capacity* through training and convening.
- **Use Evidence from the Workplace** to link with the state's workforce needs like:
  - *Earnings of college graduates by program*
  - *Employer feedback systems*

E. **Governance** should:

- *Place policy leadership for adult/workforce literacy in an agency that is responsible for postsecondary education.*
- *Allow equal voice* for all teaching institutions
- *Foster cooperation among trustees and regents* so productivity and affordability are higher priorities.

To see the full report - **Good Policy, Good Practice: Improving Outcomes and Productivity in Higher Education: A Guide for Policymakers** -*By Patrick M. Callan, Peter T. Ewell, Joni E. Finney, and Dennis P. Jones – see* http://www.nchems.org/pubs/detail.php?id=106 -

"Streamline administrative functions through technology"

1. Common Active Directory Tree for All Colleges
    - More efficient
    - Cost savings
    - Single sign on
    - More secure
    - Able to push e-mail to a specified college group (i.e. all faculty)
    - Standardization
2. Centrally Managed and Hosted E-mail Service
    - More efficient
        - 24x7 Support
        - Disaster recovery
        - Less risk
    - Cost savings
        - Staff
        - Server hardware recapitalization
        - On-going server hardware replacement
        - Software licenses
            - Server
            - Antivirus
            - Spam
        - Electricity
3. Centrally Managed and Hosted E-mail Archiving Service
    - More efficient
        - 24x7 Support
        - Disaster recovery
        - Less risk
    - Cost savings
        - Staff
        - Hardware recapitalization
        - On-going hardware replacement
        - Software licenses
        - Electricity
4. Centrally Managed Public Records Request for E-mail
    - More efficient
    - Cost savings
        - Staff
    - Legally compliant

5. Single Tier One Helpdesk for all Colleges
    - Students and perspective students
    - Student services
    - Common software systems
    - Cost savings
        - Staff
6. Unique Student Identifier (P-20 ID)

Community and Technical College System Mission Study
Considerations for Merging College Districts

Guiding Principle

- Continue to maximize opportunities for student access and achievement

Why consider merging college districts?

- To produce a more streamlined, efficient operation, and to effect improvements in quality, participation and student outcomes
    - Increase the efficiency of college resources
    - Create opportunities for improved student outcomes
    - Reduce unnecessary course and program duplication

Perceived Benefits of Merging College Districts

- Improved opportunities for students
    - Increased range of programs, degree offerings, and career pathway opportunities available after admission to the merged district
    - Improved opportunity for students to have access to best of the merged campuses training sites, equipment, skilled faculty, and student services
- Financial savings through organizational and programmatic efficiencies
    - Organizational efficiencies
        - Realignment of multi-campus administrative structures
        - Use of common administrative procedures and information systems
        - Provide some institutional services centrally or regionally
        - Report to one board of trustees
    - Programmatic efficiencies
        - Reduction in unnecessary course and program duplication
        - Opportunity for specialization in program offerings
        - Improved student services
- Stronger and more unified efforts for economic development in the region
- Reduce overlapping mission and roles between separate colleges and provide more efficient coordination
- Build on the strengths of both colleges
- Increased professional development opportunities for faculty and staff

Issues for Consideration

- Depth/degree of merger – Depends on desired outcomes
    - Reorganization of human, financial, and physical resources (ex. HR, budget and accounting, facility maintenance, grants and contracts management)
    - Development of common administrative procedures and systems
    - Consolidate financial reporting and policies
    - Reduce unnecessary program and course duplication
- Transition period - Timeline
    - Planning
        - Identification of the strengths, weaknesses, structures and processes of the colleges
        - Identification of any curriculum overlap and program divergence between the colleges
        - Impact and risk assessments
        - Integration strategy
        - Business plan with measurable outcomes
        - Re-branding
    - Implementation
        - Leadership and process for merger decisions
        - How to make sure that faculty and staff from both institutions are fairly represented in a merger
- Financial implications in short-term and long-term
    - Magnitude and timing of potential cost savings
- Differences in college contracts
    - Comparability of faculty salaries and benefits (compensation schedule)
    - Review, promotion and tenure policies
    - Role of seniority in layoffs/relocations
    - Equalizing faculty instruction time
    - Parking
    - Other working conditions
- Commitment to students
    - Student policies – As duplicate degree/certificate programs and courses are merged, students need flexibility to meet the requirements of merged programs
- Accreditation
- Governance
- Unique characteristics of the individual college
    - Does merger allow individual colleges to maintain local identity?
    - Culture of colleges/community

Professional-technical programs in Washington's community and technical colleges

as of 12/16/08

Doesn't include short-term certificates or contracted programs
❍ Collaborative program
◆ Joint program approval
⌘ Baccalaureate program

	Bates	Bellevue	Bellingham	Big Bend	Cascadia	Centralia	Clark	Clover Park	Columbia Basin	Edmonds	Everett	Grays Harbor	Green River	Highline	Lake Washington	Lower Columbia	North Seattle	Olympic	Peninsula	Pierce District	Renton	Seattle Central	Seattle Voc Institut	Shoreline	Skagit Valley	South Puget Soun	South Seattle	Spokane	Spokane Falls	Tacoma	Walla Walla	Wenatchee Valley	Whatcom	Yakima Valley
AGRICULTURE, CONSERVATION & RENEWABLE RESOURCES																																		
Agricultural & Food Products Processing																																		•
Agricultural Business & Mgmt																												•			•	•		•
Agricultural Mechanics/Maint																															•			
Agricultural Mechanization/Equipment									•																						•			
Agricultural Production				•																											•	•		•
Animal Science Tech																																		•
Aquaculture												•																						
Environmental Tech/Sustainable Practices					•													•																
Farm Mgmt						•																												
Fisheries Tech			•									•							•															
Floristry Marketing & Mgmt								•							•													•						
Forest Tech													•															•						
Greenhouse/Nursery Operations & Mgmt							•			•																		•						
Horseshoeing (Farriery)																															•			
Horticulture							•			•					•											•	•							
Irrigation Tech																															•			
Landscaping & Groundskeeping							•	•		•																	•							
Natural Resources/Conservation												•							•						•							•		
Soil Sciences																												•						
Tree Fruit Production																																•		•
Turf & Turfgrass Mgmt								•																				•			•			
Turf Equipment Mechanics																															•			
Viticulture/Fermentation																															•			•
Water Resources												•	•												•			•						
Wildlife & Wildlands Science & Mgmt																												•						
Wood Products/Pulp/Paper Tech																•																		
BUSINESS, MARKETING & ADMINISTRATIVE SERVICES																																		
Accounting Tech & Bookkeeping	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	○	•	•	•	•	•
Administrative Asst & Secretarial	•		•			•	•	•	•	•	•				•	•		•	•	•	•				•			•				•		•
Apartment & Condominium On-site Mgmt																	•																		
Banking & Financial Support Services						•															•					•		•	•		•				
Business Administration/Mgmt		•	•			•	•	•		•	•	•		•		•	•	•	•	•	•			•		•	•	•	•	•	•	•	•	•
Construction Management										•																									
Court Reporter													•																						
Customer Service Mgmt & Support/Call Center							•	•						•			•											•						
E-Commerce														•											•									•
Fashion Merchandising										•										•				•					•					
Hospitality & Hotel/Motel Mgmt								•		•				•				•						•				•					•	
Hospitality Management (Baccalaureate)																											⌘							
Hospitality/Travel Services Sales								•		•				•																				
Human Resources Mgmt/Personnel Admin		•	•				•			•					•					•					•				•				
Insurance Specialist		•																																
International Business/Trade/Commerce										•				•			•												•					
Legal Administrative Assistant/Secretary	•		•			•	•	•	•	•	•		•	•	•	•	•	•	•		•					•		•			•	•		•
Management (Baccalaureate)																			⌘																
Marketing Mgmt	•	•	•			•		•	•	•			•	•					•	•				•	•		•	•	•					•
Medical Administrative Assistant/Secretary	•		•			•	•			•			•			•			•	•	•		•			•		•		•	•	•		•
Office Automation/Data Entry/Word Processing							•							•					•		•		•		•	•			•	•		•	•	•
Office Mgmt & Supervision		•		•	•	•		•		•		•	•	•			•		•	•	•	•			•	•	•		•	•		•	•	•

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Office Occupations/Reception/Clerical		•	•				•	•	•	•	•		•	•	•				•	•	•		•		•	•		•	•	•	•	•		•
Operations Mgmt & Supervision			•																	•							•							
Paralegal/Legal Assistant							•		•	•				•						•					•	•		•		•			•	
Parts, Warehousing & Inventory Mgmt	•																							•										
Purchasing/Logistics Mgmt																														•				
Real Estate		•															•			•									•					
Retail Mgmt		•	•			•		•				•	•	•		•	•	•						•					•				•	•
Retailing & Retail Skills	•						•							•						•										•				
Small Business Mgmt/Entrepreneurship		•					•	•		•	•	•		•	•		•			•				•	•			•	•	•			•	•
Transportation & Logistics Mgmt																													•					
Tribal Gaming Management																																•		
Vehicle Parts & Accessories Marketing	•																				•				•									
EDUCATION																																		
Early Childhood Education & Teaching	•	•		•		•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•		•	•	•			•		•	•	•	•
Early Childhood Special Education		•																						•										•
Prof-Tech Teacher Education	•		•												•						•													
Teacher Assistant/Aide/Educ Parapro			•	•		•		•		•	•		•	•		•		•		•				•	•	•			•	•	•		•	•
ENGINEERING																																		
Architectural Engineering/Drafting	•							•					•		•			•								•								
Biomedical Tech	•		•														•											•						
Drafting/Design/CAD/CADD							•		•		•		•	•	•	•		•			•			•		•	•	•						•
Chemical/Science Tech									•	•			•		•													•						
Civil Engineering Tech/Civil Drafting	•		•	•		•									•		•	•			•					•	•	•			•			•
Composite Structures											•								•															
Computer Tech/Computer Systems Tech	•		•							•										•									•				
Construction Engineering Tech																												•						
Electrical Design Tech	•																								•									
Electrical, Electronics & Communications Engr Tech	•					•				•					•		•	•							•			•						
Electromechanical Tech																												•						
Electronic/Fire Security Tech								•																										
Engineering Tech									•	•																					•			
Environmental Engineering Tech								•																										
Geographic Information Systems											•	•	•					•																
Hydraulics & Fluid Power Tech																												•						
Industrial/Manufacturing Tech			•								•				•			•			•			•			•						
Instrumentation Tech			•													•									•									
Mechanical Tech/Mechanical Drafting	•		•					•					•		•			•								•	•	•						
Nanotechnology																	•																	
Occupational Safety & Health Tech	•									•										•														
Survey Tech	•		•				•														•					•								
Telecommunications Tech							•																				•							
Water Quality & Wastewater Mgmt & Recycling Tech													•												•									
HEALTH PROFESSIONS																																		
Biological Lab Tech	•																							•				•						
Cardiac Invasive Tech																												•	❍					
Clinical/Medical Lab Tech								•		•											•			•				❍	❍		❍	•		
Dental Assistant	•		•					•	•						•						•		•			•		•	❍					•
Dental Hygienist			•				•		•						•				❍	•		•		•										•

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Dental Laboratory Tech	●																																	
Denture Tech	●																																	
Diagnostic Medical Sonography/Ultrasound Tech		●							●																			●		●				
Echocardiographic Tech																												●	○					
Emergency Medical Tech/Paramedic			●				●		●								●											●	○	●				
Electroneurodiagnostic Tech		●																																
Geriatric Aide										●																			●					
Health Information/Medical Records Tech		●					●			●		●		●			●							●	●			●	○	●				
Health Unit Coordinator/Ward Clerk								●	●	●													●					●	○			●		
Hearing Instrument Fitter & Dispenser Tech	●																											○	●					
Hemodialysis Tech								●																	●									
Histology Tech								●																										
Home Health Aide																								●										
Horticulture Therapy Aide										●																								
Hospital Central Service Tech			●					●																										
Human Service Training									●			●		●	●										●					●				
Hypnotherapy			●																															
Massage Therapist								●							●				●		●							●				●		
Medical Insurance Coding/Specialist		●	●				●		●		●		●	●	●	●		●			●			●				●	○	●		●	●
Medical Office Assistant									●																	●			●			●		
Medical Office Mgmt				●							●								●															
Medical Radiologic Tech		●	●				●		●	○	○						○		○									●	○	●		●		●
Medical Receptionist	●						●			●	●					●		●		●	●							●		●			●	
Medical Transcription	●	●	●				●		●		●		●	●	●	●	●				●				●	●		●		●				●
Medical/Clinical Assistant				●			●	●	●		●			●	●	●	●	●	●		●		●		●	●		●	○		●	●	●	●
Mental Health Services Tech																				●														
Multi-Skilled Health Care Tech										●																								
Nuclear Medical Tech		●							○																						●			
Nursing Assistant/Aide			●	●		●		●	●		●		●			●	●			●			●		●	●				●		●		●
Nursing, Associate Degree		●	●	●		●	●	●	●		●	●		●	●	●	●	●	●	●	●	●		●	●	●	●	●	○	●	●	●	●	●
Nursing, Baccalaureate																		⌘																
Nursing, Practical	●		●	●		●		●	●	○	●	●	●		●	●	●	●		●	●				●	●	●	●	○		●	●		●
Occupational Therapy Assistant													●		●																			
Opticianry/Ophthalmic Dispensing Optician																						●												
Optometric Tech																					●							●	○					
Orthotics/Prosthetics																												○	●					
Pharmacy Tech			●				●	●		●							●				●				●			●	○	●				●
Phlebotomy Assistant																									●									
Physical Therapy Assistant											◆		●		◆			●										○	●					
Polysomnographic Tech										○				●				○												○		●		
Radiation & Imaging (Baccalaureate)		⌘																																
Recreational Therapy Tech										●																								
Rehabilitation Counseling/Service Worker										●																								
Respiratory Therapy														●								●						●	○	●				
Sign Language Interpreter																						●												
Social/Human Services Counseling/Casework								●		●								●				●							●					
Speech/Hearing Therapy Aide																								●					●					
Substance Abuse/Alcoholism Counseling		●					●	●	●	●				●		●		●	●	●		●			●				●		●			●
Surgical Tech			●					●	●												●	●						●	○		●			●
Veterinarian Assistant/Tech			●																	●														●

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HOSPITALITY, FOODS & RECREATION																																		
Aesthetician & Skin Care Spec								•										•										•						
Baking & Pastry Arts			•				•			•					•						•	•				•	•	•						
Barbering	•							•										•																
Cosmetology	•							•			•							•			•	•	•	•				•			•			
Cosmetology, Barber/Stylist & Nail Instructor																		•										•						
Culinary Arts/Chef Training	•		•				•	•	•	•					•			•			•	•			•	•	•	•			•			
Custodial/Building Services																					•													
Funeral Service Education															•																			
Golf Mgmt																															•			
Nail Technician/Specialist & Manicuring								•										•										•						
Parks, Recreation & Leisure Facilities Mgmt													•															•						
Restaurant, Culinary & Catering Mgmt	•						•	•											•								•							•
Salon/Beauty Salon Mgmt																								•										
Sports & Fitness Mgmt							•							•	•					•					•				•					
INDUSTRIAL, CONSTRUCTION & MANUFACTURING																																		
Building/Construction Mgmt & Inspection	•		•							•										•	•													
Cabinetmaking & Millwork	•											•										•												
Carpentry	•						•					•	•						•			•						•			•	•		
Computerized Numerical Control Mfg																•					•													
Electrician/Lineworker	•		•	•												•												•			•			
Electrical/Power Transmission							•																											
Electronics Assembly						•									•																			
Job Skills for Construction Trades								•		•											•		•		•									
Machine Tool Tech	•		•				•	•	•		•		•		•	•					•			•			•	•			•			
Multi-Occupational Trades/Apprenticeship	•								•												•						•	•				•		
Sheet Metal Tech	•																							•										
Upholstery								•																										
Welding Tech	•		•	•		•	•	•	•		•	•	•		•	•		•	•		•				•	•	•	•			•			
Zero Energy Building																								•										
INFORMATION TECHNOLOGY																																		
Computer & Information Systems Security								•		•			•	•															•					
Computer Graphics		•								•	•				•					•				•										
Computer Programming	•	•		•	•	•	•	•	•	•				•	•	•		•	•	•		•			•	•					•	•		
Computer Systems Networking & Telecomm	•	•	•		•		•	•	•	•	•		•	•	•		•	•	•	•	•	•			•	•	•		•	•	•	•	•	•
Data Warehousing/Mining & Database Admin	•	•					•			•			•							•		•				•								
Digital Media: Web Page, Digital/Multimedia	•	•					•	•	•	•	•				•				•			•		•	•	•	•	•	•					•
Information Processing								•	•	•	•	•							•		•			•	•	•	•	•	•			•		•
Microcomputer Applications, General		•	•		•					•		•	•		•	•			•		•			•	•	•			•	•	•			
Photographic & Film/Video Tech		•																						•										
System, Networking & LAN/WAN Mgmt													•	•						•								•						
Technical Support/Support Services		•		•	•				•		•	•	•					•	•	•		•		•	•		•		•	•	•		•	•
Web/Multimedia Mgmt & Webmaster	•				•		•		•	•	•							•				•				•					•			
MECHANICS																																		
Aircraft Mechanics, Airframe/Powerplant				•				•			•																•	•						
Appliance Installation & Repair Tech			•																		•													
Autobody/Collision & Repair Tech	•		•					•	•			•	•		•						•						•	•			•			
Automotive Mechanic/Tech	•		•	•			•	•	•			•	•		•	•		•	•		•			•	•	•	•	•			•	•		•

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Automotive Service Writing																									●									
Communication Systems Installer & Repairer	●		●														●																	
Computer Installation & Repair Tech																							●		●									
Computer Integrated Manufacturing													●																					
Diesel Mechanics Tech	●		●			●	●					●			●	●									●		●	●			●			
Electrical & Electronics Equip Installer & Rpr	●																				●													
Heating/Air Conditioning/Ventilation/Refrig Maint Tech	●		●					●									●				●							●			●	●		
Heavy Equipment Maint Tech			●	●												●																		
Industrial Electronics Tech	●						●										●															●		
Industrial Mechanics & Maint			●													●														●				
Industrial Plant Services																					●						●							
Marine Maint & Repair																		●							●									
Motorcycle Maint & Repair Tech															●																			
Musical Instrument Fabrication & Repair																					●													
Small Engine Mechanics & Repair Tech	●																											●						
Stationary Energy Sources Installer & Operator	●					●															●										●			
Watch & Clock Repair																	●																	
MEDIA, COMMUNICATIONS & DESIGN																																		
Animation, Video Graphics & Spec Effects															●			●																
Arts Mgmt																														●				
Commercial & Advertising Art																						●							●					
Commercial Photography										●												●							●					
Communications Tech																	●																	
Custom Apparel-Design & Construction	●																					●												
Desktop Publishing & Digital Imaging Design		●					●	●														●									●		●	
Graphic & Printing Equipment Oper/Genl Production														●								●		●										
Interior Design		●						●						●															●					
Language Interpreter/Translator		●																		●	●													
Library Assistant														●															●					
Music Instrument Digital Interface										●						●								●										
Music Mgmt & Merchandising																								●										
Radio & Television Broadcasting Tech	●							●	●																									
Recording Arts Tech	●																												●					
Visual Communications														●								●												
PROTECTIVE SERVICES																																		
Correctional Mental Health																				●														
Corrections						●			●	●	●		●						●	●				●				●		●	●				
Criminal Justice/Law Enforcement Admin		●				●			●					●		●			●	●				●	●					●	●		●	●
Criminal Justice/Police Science						●					●	●	●					●										●		●		●			
Emergency Dispatcher										●																		●							
Emergency Management								●		●										●															
Fire Science/Firefighting	●	●									●					●		●							●	●		●			●	●			
Fire Services Administration/Fire Officer	❍	●							●	●						●		●		●						●		●							
Forensic Tech						●			●				●							●													●		
Security & Loss Prevention Services									●															●											
Wildland Firefighting													●																						
TRANSPORTATION & MATERIALS MOVING																																		
Air Traffic Controller													●																					

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Airline/Commercial/Prof Pilot & Flight Crew				●				●					●					○																
Aviation/Airway Mgmt & Operations													●														●							
Commercial Helicopter Pilot													●																					
Marine Carpentry/Boat Building	●																					●												
Merchant Marine Officer																						●												
Truck & Bus Driver/Commercial Vehicle Operation	●		●	●								●																			●			