Expanding the Positive Effect of Career & Technical Education



Presented by:

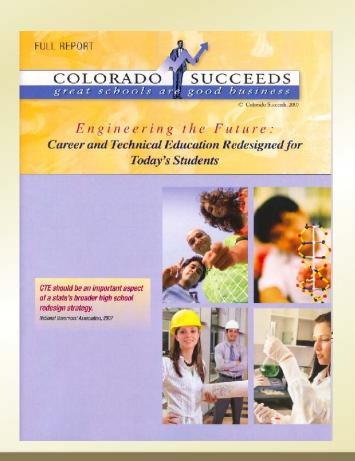
Dr. Geri Anderson, Vice President & Provost, CCCS Scott Stump, Dean of Career & Technical Education, CCCS







Real Change



Colorado's 21st Century CTE
Programs have evolved beyond "your
parents" vocational education.

They are Colorado's best kept secret for:

- Relevant & rigorous learning
- Raising achievement among all students
- Strengthening Colorado's workforce & economy!







Colorado CTE Snapshot: Secondary Programs

- 116,000+ student enrollments
 - 1,200+ programs in 160 school districts
- One out of every three Colorado high school students is gaining valuable experiences through CTE (38% and increasing)
- 94% of respondents who completed secondary CTE programs were employed in related jobs and/or continuing their education one year later







Colorado CTE Snapshot: Postsecondary Programs

- 23,798 student enrollments
 - 700 programs delivered via
 - 13 system community colleges
 - 3 local district colleges
 - 3 area technical colleges
 - State correctional facilities









The Dilemma

- 74% of the jobs today require higher skills than five years ago!
- 72% of our youth can not qualify for military service
- 62% of higher degrees go to foreign nationals
- For every 100 Colorado 9th graders, only 22 graduate with an associate's degree in 3 years or a bachelor's degree in 6 years.







Colorado's Current Pipeline

100

In Colorado, for every 100 ninth grade students

students graduate from high school four years later

students immediately enter college

students are still enrolled in their second year



students graduate with either an associate's degree within three years or a bachelor's degree within six years

Source: NCES 2006







New Employment Paradigm

Nearly 80% of Colorado jobs will require some form of postsecondary education and 60% will require at least a 2-year, but not a 4-year degree.

- Colorado Department of Labor & Employment







100 22 students are still students graduate with either an associate's students graduate students In Colorado, degree within three years or a bachelor's enrolled in their from high school immediately for every 100 ninth degree within six years second year four years later enter college grade students Source: NCES 2006 22% 26%

How do we keep more in the pipeline?

How do we reengage the 78% we lost?







Real Purpose

Vision: Colorado CTE delivers proven pathways to lifelong career success!

Mission: CTE ensures a thriving Colorado economy by providing relevant and rigorous education that is connected, responsive and real.







Colorado Career Cluster Model



Management and Administration

- Administrative Services
- Business Information Technology
- Corporate/General Management
- Human Resource Management
- Operations Management

Marketing

- Marketing Communications
 Planning
- Marketing Management
- Marketing Research
- Merchandising
- Professional Sales/Sales Management

Finance

- Accounting
- Banking Services
- Corporate Finance
- Insurance
- Securities & Investments

Government & Public

- Administration
- Foreign Service
- Governance
- Legal Services
- Public Management & Administration
- Regulation
- Revenue & Taxation

Business, Marketing & **Public Administration**

Hospitality, Human **Services & Education**

Hospitality & Tourism

- Recreation, Amusements & Attractions
- Restaurants, Food & Beverage Services
- Travel & Tourism

Human Services

- Consumer Services
- Counseling & Mental Health Services
- Early Childhood Development
- Family & Community Services
- Personal Care Services

Education & Training

- Administration and Administrative Support
- Professional Support Services
- Teaching and Training

Agriculture, Food & Natural Resources

- Animal Science*
- Agribusiness Systems
- Food Products & Processing Systems*
- Natural Resource & Environmental Systems*
- Plant Science*
- Power, Structural & Technical Systems*

- Electromechanical Generation & Maintenance*
- Electrical Energy Transmission & Distribution*
- Energy Efficiency & Environmental Technology*
- Fossil Energy Extraction, Processing & Distribution*
- Renewable Energy Production*
- *STEM affiliated pathway

Agriculture, Natural Resources & Energy

Postsecondary & Workforce Readiness

Foundation knowledge & skills for all career pathways include:

- Academic Content Knowledge Civic Responsibility Collaboration • Communication • Creativity & Innovation
- Critical Thinking/Problem Solving Find/Use Information Technology
- Global & Cultural Awareness Personal Responsibility Work Ethic

Specialized CTE Pathways include: Alternative Cooperative Education (ACE), FACS CORE & World of Work

Health Science, Criminal Justice & **Public Safety**

Health Science

- Biotechnology Research & Development*
- Diagnostic Services*
- Health Informatics
- Supportive Services
- Therapeutic Services*

Law, Public Safety, Corrections & Security

- Correction Services
- Emergency & Fire Management Services*
- Law Enforcement Services
- Security & Protective Services
- * STEM affiliated pathway

STEM (Science, Technology, Engineering & Math) See also STEM affiliated pathways noted by *

- Research, Exploration & Innovation
- Design, Development & Application

Arts, A/V Technology and Communication

- Audio/Video Technology & Film
- Journalism & Broadcasting
- Performing Arts
- Printing/Publishing
- Visual & Design Arts

Information Technology

- Information Support and Services
- Interactive Media
- Network Systems & Telecommunications*
- Programming & Software Engineering*

STEM, Arts, Design & Information **Technology**

Skilled Trades & **Technical Sciences**

Architecture & Construction

- Construction
- Design & Pre-construction* Maintenance
- Maintenance & Operations
 Health, Safety &

Manufacturing

- Health, Safety & Environmental Assurance
- Logistics & Inventory Control Regulation
- Manufacturing Production
- Repair
- Production/Process Technology*
- Quality Assurance

Transportation, **Distribution & Logistics**

- Facility & Mobile Equipment
- **Environmental Management**
- Logistics, Planning & Management Services
- Planning, Management &
- Sales & Service

Infrastructure

- Maintenance, Installation & Transportation Operations
 - Transportation/Systems
 - Warehousing & Distribution **Center Operations**
 - * STEM affiliated pathway



Pathway: Health Informatics

Plan of Study: Medical Administration

Career Goal (O*Net Code): Healthcare Administrator (11-9111), Medical and Health Services Manager (11-9111), Medical Assistant (31-9092), Medical Records & Health (29-2071), Medical Secretary (43-5013)

Marine .	(00)		Suggested High School Courses	4	
1000		Core Academic English I, Algebra I, Earth, Life or Environmental Science, State HistoryCivics		Suggested Electives: Physical Education or	
-		Courses:	Health Science (HS) II. Intro to Health Science*	Business Foundations	
-25	4	Core Academic Courses*: Esgish II, Geometry, Biology, US History, Foreign Language I		Suggresso Excelves: Nutrition & Welfress or	
School 34 Hg Squire	5	Career Path Courses:	HS II; Health, Safety and Ethics in the Health Environment*	Applications	
Agh S		Core Academio Courses*:	English III, Algebra IV or other, Chemistry, World History	Suggested Electives: Sociology,	
11	F	Courses:	HS II: Employment in Health Occupations*	Speech or Accounting	
8	4	Core Academic Courses*:	English IV, Trigonometry or Statistics, Physics or Anatomy & Physiology or other lab based science, Economics/Government	Suggested Electives: Psychology or	
126 1	2	Career Path Courses:	HS IV: Medical Office Emphasis*	Budnes Naragement	
	•	Married Married Woman or Williams	Control of the Contro		

Secondary to Postsecondary Linkages & Certifications

Advanced Credit Pathway: ** HPR 100 Into to Health, HPR 101 Customer Service in Health Care, HPR 104 Health Career Options, HPR 106 Law & Ethics, HPR 173 Medical Terminology, MOT 106 Into to Clinical Skills

| Housetry Recognized Certificate(s) or License(s):
| Certifica Nursing Assistant (CNA) | First Responder.

		Postsecondary Programs Available in Colorado	Colorado Institutions	Emission Epident Requirements
rifes	Corminate	Medical Office Technologies Medical Office Management/Administration Medical Administrative Assistant	Pickens Technical College, EGOS, Community Colleges: Arms, Arapahoe, Denver, Front Range, Lamar, Morgan, Pikes Peak, Red Rocks, TSJC	High School diploma/GED Accuplacer
ion Opports	Associate	Medical Administrative Assistant Medical Office Technologies	Community Colleges: Aims, Arapahoe, Morgan, Pilens Poals, Red Rooks Mesa State College	High School dploma/GED Accuptacer
Postsacondary Educati	Such dor Dages	Health Care Management	Metropolitan State College of Denver	See MSCD Admissions website. ACT
	Dreshade Dayne	Health Care Administration, MS International Health Management and Policy, MS Health Administration, MS Executive MBA (Health Administration) Public Health, MPH	University of Colorado-Colorado Springs University of Colorado-Denver University of Colorado-Denver Health Sciences Certier University of Northern Colorado	See each schools Admissions withelite

Cluster Overview: The Health Science Career Cluster prepares students for careers in planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

CALCULATION AND AND AND AND AND AND AND AND AND AN
ded Learning Experiences Extraourricular Experiences:
Examples: National Youth Leadership Forum on Medicine Medical Massion Trips Special Olympics
Program Accreditation and/or Professional Association(s): Examples: American Association of Medical Assistants Association of University Programs Health Administration National Commission for Health Education Credentialing American Public Health Association.

	Career Options:	Salary Range*
Carificate	Medical Billing Clerk Medical Office Assistant	6-55
Deprin	Medical Secretary	S-55
Byge	Healthcare Administrator, Medical and Health Services Manager Public Health Educator, Patient Advocate, Data Analyst	SSS - SSSS
Degree	Researcher, Healthcare System Manager Medical Consultant, Public Health Administrator	555 - 5555

^{* \$ = \$15-25,000; \$\$ = \$25-55,000; \$\$\$ = \$55-50,000; \$\$\$\$ =} Above \$90,000

"Ansert institution Name Alex?" does not discriminate on the back of rice, color, national origin, see, disability or age in its programs or activities. Please direct inquiries to: bisect name, address and seeptions number of AAAEO without

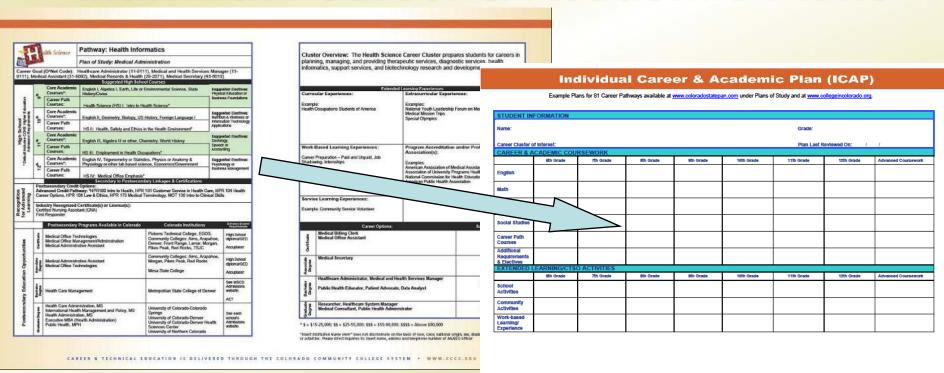
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Plans of Study Lead to **Individual Career & Academic Plans**



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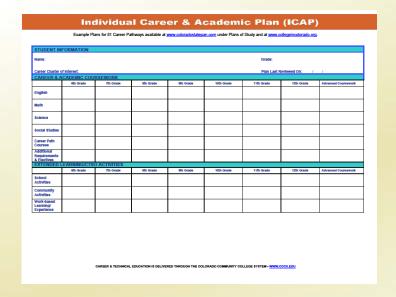






The Potential of Individual Career & Academic Plans (ICAP)

- Creates "Relevant" High School Experience
- Builds "Academic Momentum"
- Allow for "Learn & Earn" opportunities within Career Pathways
- Increases "Intentional" Concurrent Enrollment





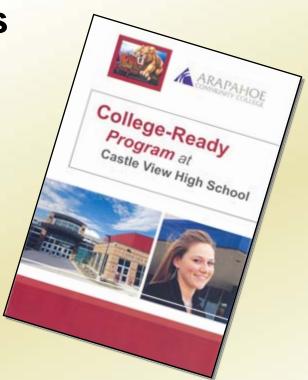




Aligning Secondary & Postsecondary Content

Advanced Placement Opportunities

- Concurrent Enrollment
- Articulation agreements
- ACP: Advanced Credit Pathway
 - Awards college credit to students who master equivalent college competencies in high school CTE courses
 - Motivates students to continue learning
 - Qualifies them for the workforce sooner
 - Can save families money









Insert Institution Logo Here

(Insert Institution Name and Program Name) Postsecondary Plan of Study



Pathway: Visual & I	esign Arts Plan of Study: Multimedia Graphic Design
Career Goal (O*Net Code): (Click the code to a employment outlook information)	Relevant Occupational Experience (Your Life Experiences may be worth College Credit!): CCCS Credit for Prior Learning Guide
Multimedia Arts & Animator (27-1014) * Photographer (27-4021) Artist (27-1019)	(Insert relevant occupations/skills/Military experience here and include Institution policy on Credit for Prior Learning)
* - High Demand Career	LMI Gateway Link to Related Occupations

	Programs Available	Program Length (*Based on meeting Program Entrance Requirements)	Estimated Tuition	Career Options	Salary Range
Option(s)	Digital Image Design to Print	15 credits (1 Sem) 21 credits (2 Sem)		Graphic Designer/ Illustrator, Multimedia Graphic Designer, Web Designer, Professional Photographer	\$-\$\$
Associate Degree(s)	Multimedia Graphic Design	65 credits (4 Sem)		Graphic Designer/Illustrator, Multimedia Graphic Designer/Animator, Web Designer, Professional Photographer	\$ -\$\$\$
rticu	ation Opportunities to Advanced Degrees:				
Advanced Degme(s)		Associates Degree +	University of	Artist, Art Director, Creative Director, Painter & Illustrator, Multimedia	
Dega	Bachelors Degree: Art & Design, with Graphic Design Emphasis	60 Credits	Northern Colorado	Artist, Animator, Art Gallery Manager, Art Teacher, Photographer, Fine Artist, Career Teacher	\$ - \$\$
Dega	Bachelors Degree: Art & Design, with Graphic Design Emphasis Graduate Degree: Art & Design, with Graphic Design Emphasis		Northern	Artist, Animator, Art Gallery Manager, Art Teacher, Photographer, Fine Artist, Career	\$-\$1 \$-\$1

[&]quot;\$ = \$15-25,000; \$\$ = \$25-55,000; \$\$\$ = \$55-90,000; \$\$\$\$ = Above \$90,000

Insert Institution Logo Here

(Insert Institution Name and Program Name) Postsecondary Plan of Study

Extended Learning Experiences



Support Structures: (Insert support services for nontraditional students that exist at your institution here)
Examples: Childcare facilities, Counseling services, Tutoring services, Academic Advising
Financial Aid:
(Insert Financial Aid Opportunities for students here)
Professional Affiliations (Insert professional organizations here)
Examples: Media Communications Association-International
National Academy of Television Arts & Sciences
National Association of Minorities in Communications Screen Actors Guild
World Wide Web Artists' Consortium
Practical Learning Experiences:
(Insert non-classroom learning experiences here – ie internships, job shadowing, etc)

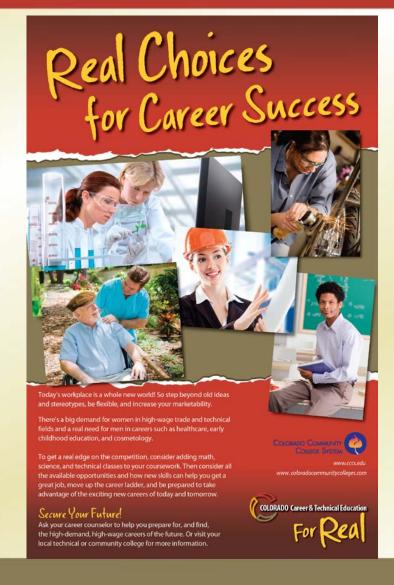
Insert Institution Name is accredited by the Higher Learning Commission and a member of the North Central Association of Colleges and Schools.

Insert Institution Name Here does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs or activities. Please direct inquiries to: Insert name, address and telephone number of AA/EEO officer

^{***} This document is a guide only. It does not act as a legally binding contract.

Reengaging **Adult Learners**

 Awareness campaign for Non-Traditional Learners









Aligning Academic & **Technical Content**

CAP4K Requirements

2(b): In developing the preschool through elementary and secondary education standards, the State Board shall also take into account any Career & Technical Education standards adopted by the State Board for Community Colleges and Occupational Education, created in Section 23-60-104, C.R.S., and, to the extent practicable, shall align the appropriate portions of the preschool through elementary and secondary Education standards with the Career and Technical standards.







What is a Valid Alignment?

- It is the point where technical and academic content naturally collide!
- It is relevance in action!
- It exists when the student must demonstrate mastery of the academic standard to perform the technical skill!







Math Example

Care er Cluster/Cluster Grouping:	Marketing		
Pathway(s):	Merchandising		

Prepared Completer Competencies:

MKME.03 Information Management: Understands tools, strategies, and systems needed to access, process, maintain, evaluate, and disseminate information to assist business decision-making.

High School Expectations

Concepts and skills students know include:

MKME.03.01 Utilize information-technology tools to manage and perform merchandising responsibilities.

Evi	dence Outcomes Students can:	21st Century Skills and Readiness Competencies			
a. b. c.	Analyze the impact of technology on retailing. MAT2.6c RWC.4.11.h RWC4.11.i Utilize merchandising software. MAT2.4.b Obtain information from retail databases to aid in product planning and control. MAT3.1.a, MAT3.1.b, MAT3.1.c	Academic Content Knowledge Alignment: MAT3.1.a-Mathematics, Data Analysis, Statistics, and Probability, Design of censuses, surveys, observational and experimental studies to answer statistical questions and understand the types of inferences can legitimately be drawn from each Formulate appropriate research questions that can answered with statistical analysis.			
		MAT3.1.b-Mathematics, Data Analysis, Statistics, and Probability, Design of censuses, surveys, observational and experimental studies to answer statistical questions and understand the types of inferences can legitimately be drawn from each Determine appropriate data collection methods to answer a research question.			
		MAT3.1.c-Mathematics, Data Analysis, Statistics, and Probability, Design of censuses, surveys, observational and experimental studies to answer statistical questions and understand the types of inferences can legitimately be drawn from each Explain how data will be analyzed to provide answers to a research question.			







The Result

- One set of aligned Essential skills to drive Postsecondary and Workforce Readiness inclusion in all Career & Technical Education programs.
- 52 pathways with validated academic alignments
- 12 pathways with revised standards ready for alignment (currently no approved programs in these pathways)
- 21 pathways where no secondary programming currently exists. Standards and alignments will be developed as programs emerge.
- Available for review at:

www.coloradostateplan.com/content_standards.htm







CSAP Comparison of 2009 CTE Secondary Graduates								
Grade 10 CSAP(07) Comparison of 2009 CTE Completers	General Population Partially Proficient, Proficient & Advanced for Math	2009 CTE graduates Partially Proficient, Proficient & Advanced for Math	Difference		General Population Partially Proficient, Proficient & Advanced for Reading	2009 CTE graduates Partially Proficient, Proficient & Advanced for Reading	Difference	
State: COLORADO	64%				88%			
Female Male	64% 65%				92% 86%			
American Indian/Alaska Native	47%				82%			
Asian/Pacific Islander Black (not Hispanic)	77% 37%				91%			
Hispanic	42%	53.41%	11.41%		77%	89.02%	12.02%	
White (not Hispanic)	75%	79.39%	4.39%		93%	96.66%	3.66%	







Real Partnerships





Colorado Department of Higher Education





- Seamless Education
 - Standards Revisions & Alignment
 - Seamless Pathways through Articulation Agreements
 - Comprehensive Guidance
- Business, Industry, Colorado Department of Labor & Employment, Economic Development, etc.







Questions & Answers

Dr. Geri Anderson, Vice President & Provost, CCCS

Scott Stump, Dean of Career & Technical Education, CCCS





