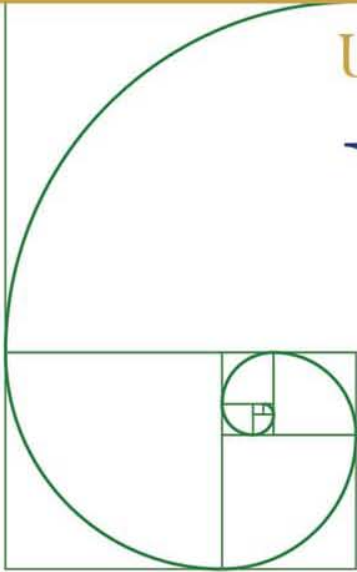


SUBJECT AREA: "C" - MATHEMATICS, CTE INDUSTRY SECTOR: FINANCE & BUSINESS



University of California Curriculum Integration

UCCI Institute

MAY 16-19, 2010

HIGH ACADEMIC CONTENT, ESSENTIAL SKILLS-BASED LEARNING

UCLA Lake Arrowhead Conference Center
850 Willow Creek Rd, Lake Arrowhead, CA



$$\alpha\beta/\zeta$$

$$\epsilon\eta - i\pi$$

$$\omega\tau\eta\omega\omega\omega\omega$$

$$\phi\delta\pm 9\lambda\mu\pi\tau$$

$$\nu\chi\omega\Omega/\beta\nu/+ \cdot =$$

$$\sigma\mu\tau\omega\theta 2\alpha\phi\gamma 4\lambda: \epsilon$$

$$\mu/\nu\beta\eta\chi\gamma\omega 78\delta\kappa\langle \lambda$$

$$\pi 3f 9\omega\lambda\nu 4\mu\tau(7x+2i)$$

$$i + y_j y_i = 0, \quad i, j = 1, \dots, n$$

$$\delta = \pi\zeta(a|b)\alpha\theta\nu 1(\phi) * 2\omega\sigma\epsilon\chi\delta 2\mu\mu\tau\omega\theta\theta 7\equiv 7\% = 3\pm\nu\lambda\omega\omega 29$$

$$\% \Omega \int \pm 2(\phi)\chi \sum \pm 5\zeta 6\% \pm \psi^{\wedge} \nu\phi \int 2\% \chi(f) \pm \lambda\mu\phi\nu 4\mu\tau\phi\omega xy$$

$$-9\epsilon\omega\sum b_i^{\omega} y_i + (b_i - \lambda_i) y_i \psi \quad \pi\zeta 3\beta^{\wedge} 2\% \chi \sum \pm i\delta\gamma\kappa\lambda\zeta\theta\epsilon 3\pi 1$$

$$\psi 7\Omega \int_{\mu}^{\omega} \chi^{\pm} \geq 6\alpha\omega\tau\mu\delta\epsilon\delta\tau\beta\epsilon\chi + 23\epsilon\beta\lambda\theta\gamma\sigma\mu\tau\delta\tau\beta 5\zeta\pi$$

$$\pm \Omega + 2(\chi)\sum(\phi) 78.4\alpha\theta\zeta > 4 * \lambda\omega 90\pi: \epsilon \quad \alpha\beta(xy)d(f) = 2 = > \psi\psi(x+3i)\mu^{\omega}(a)$$

$$\tau\chi\omega\nu: 5\mu 9\epsilon\omega\omega\omega 05 \pm \zeta + \nu\sigma\epsilon 4\alpha\omega\zeta = \% = 3\pi: \cdot * (xy) + 7\% = 3\pm$$

$$\tau\omega\zeta 3\theta f = 21\% = 0.43\pi: \cdot * (xy) + > 4\pi\lambda\nu 4d(t) = 2 = > \pm \omega \sum \pm 6\epsilon\delta\tau\omega\theta\omega\beta\gamma\tau 5\% \psi \lambda\zeta$$

$$\epsilon 6\pm(a|b)(\epsilon\delta\tau\omega 5\zeta\gamma^{\wedge} \chi 1\mu\tau 9\beta\eta\omega\zeta 8\beta 5\delta\tau\mu\phi 9+\beta: \eta\omega\zeta 8>\psi 7\theta\tau\omega\pm x + \zeta f = 7 4x\omega\omega$$

$$1\theta\Omega/\gamma\omega 2^{\wedge} \delta\omega\kappa\omega\gamma = 6 + (\pi\lambda) + \zeta\chi\zeta\theta\pi x_i x_i = x_i x_i, \quad x_i^2 = 0, \quad i, j = 1, \dots, n$$

$$2\omega\sigma\epsilon\gamma\delta\alpha\beta\zeta\Omega\int > 4 * \lambda\omega 9 + 2\pi^{\wedge} \nu: \epsilon 1 - \pi\lambda \delta\sigma 3\gamma\mu\phi + \sigma\epsilon/4\omega: \psi 98\theta$$

UNIVERSITY OF CALIFORNIA

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

OFFICE OF THE VICE PRESIDENT — STUDENT AFFAIRS

OFFICE OF THE PRESIDENT
1111 Franklin Street, 9th Floor
Oakland, California 94607-5200

May 2010

Dear Colleagues:

Welcome to the University of California Curriculum Integration (UCCI) Institute. You are participating in the inaugural institute devoted to developing innovative courses that integrate Career Technical Education (CTE) with the academic rigor of “a-g” curriculum. It is my hope that you will not only benefit from this experience, but be inspired by the renewed attention to California’s commitment to Career Technical Education.

The University of California’s commitment to Career Technical Education has never been stronger. UC has set the goal of approving 10,000 CTE courses by 2011. We anticipate that we will not only meet, but will exceed, this goal. But your help is needed. You were selected to join the a cohort of teachers, called the Cadre of Experts, who will strive to further the development of CTE courses statewide. This institute will be a working event. Courses developed at this institute will be highlighted on the University of California’s “a-g” Guide website at www.ucop.edu/doorways/a-gGuide, for adoption by high schools throughout California.

As always, we strive to provide you with the opportunity to learn from the experts, engage in discussions of best practices, network with colleagues from your district and from across the state as well as the University of California, and return to your work with more tools to better prepare prospective students for success at the University of California. The work you do is both important and appreciated.

Our success in guiding students through higher education effectively and efficiently improves the career and financial opportunities for our students individually, and also serves the needs of the State, ultimately allowing us all to prosper. Thank you for joining us today as we work together to strengthen California’s educational systems.

Sincerely,

Judy K. Sakaki
Judy K. Sakaki
Vice President - Student Affairs

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General Conference Information

Important Details

MAIN LODGE

Opens at 6:00 a.m. and closes at midnight. Complimentary coffee, tea, and fruit are available in the lobby.

MEALS

All meals (breakfast, lunch, and dinner) will be served daily in the dining room located in the Main Lodge. Working meals and break foods will be served in the Iris Room as noted on the agenda.

CHECKING OUT

While the UCCI Institute concludes at 4:00 p.m., we ask that you please vacate your room no later than noon and return your key to the Front Desk. All UCCI Institute participants may leave their luggage in the living room of the Main Lodge until the conference concludes.

SHUTTLE

Shuttles will be running daily for transportation from the conference center to the Ontario Airport. For shuttle schedule information (or to request a shuttle) and other logistical information, please contact Sheri Najafi at 510-508-9552.

EMERGENCIES

In the event that you need paramedic or police assistance, dial 9 + 911. Mountains Community Hospital is one mile away. Dial "0" to report an emergency. Please note that the Front Desk has first aid supplies.

Conference Center Amenities

INTERNET ACCESS

Wireless internet capability is available throughout the property, as well as hard-lines in the rooms. Faxes may be sent and received at the Front Desk for a fee.

LAUNDRY

Coin-operated washers and dryers are located at the west end of the Main Lodge.

SUNDRIES

Newspapers, toothbrushes, film, aspirin, and batteries are available at the Front Desk.

Conference Center Activities

HIKING TRAIL

Guides to nearby walking, hiking and running trails may be obtained at the Front Desk.

GYM

Access is free for all visitors and available 24 hours daily.

GAMES AND SPORTS EQUIPMENT

Basketballs, footballs, volleyballs, tennis balls and rackets, ping-pong balls and paddles, shuffleboard, frisbees, softballs, cards, and assorted board games may be borrowed at the Front Desk.

Lake Arrowhead Conference Center

 **UCLA Arrowhead**
CONFERENCE CENTER
& Mountain Resort





Agenda

Sunday, May 16

3:00 p.m. – 5:00 p.m.	Registration	MAIN LODGE
5:00 p.m. – 6:00 p.m.	Welcome and Opening Remarks ◆ <i>Dr. Susan Wilbur, Director, Undergraduate Admissions, UCOP</i> ◆ <i>Dr. Lloyd McCabe, Senior Policy Consultant, CA Dept. of Education</i>	IRIS ROOM
6:00 p.m. – 7:15 p.m.	Whole Brain Exercise	IRIS ROOM
7:15 p.m. – 7:50 p.m.	Working Dinner Skills Session I: “a-g” Criteria & the Course Template ◆ <i>Nina Costales, High School Articulation Analyst, UCOP</i>	IRIS ROOM
7:50 p.m. – 8:00 p.m.	Logistics	IRIS ROOM

Monday, May 17

7:00 a.m. – 8:00 a.m.	Hot Breakfast	MAIN LODGE
8:00 a.m. – 8:15 a.m.	Logistics	IRIS ROOM
8:15 a.m. – 9:00 a.m.	Daily Topic Speaker ◆ <i>Tom Moore, Math & Construction Instructor, Loveland HS</i> ◆ <i>Scott Burke, Industrial Technology Dept. Chair, Loveland HS</i>	IRIS ROOM
9:00 a.m. – 10:15 a.m.	Skills Session II: Course Development & CTE Standards ◆ <i>Nina Costales, High School Articulation Analyst, UCOP</i> ◆ <i>Lori Gomes, CTE Coordinator, Merced County Office of Education</i>	IRIS ROOM
10:15 a.m. – 10:30 a.m.	Healthy Foods Break	IRIS ROOM
10:30 a.m. – 12:00 p.m.	Curriculum Team Session I ▼ <i>Team Grounding</i> ▼ <i>Agreeing on the Course Title, Purpose & Unit Value</i>	See Team Sheet
12:00 p.m. – 1:00 p.m.	Lunch	MAIN LODGE
1:00 p.m. – 2:55 p.m.	Curriculum Team Session II ▼ <i>Listing and Comparing the Essential Math & CTE Standards</i>	See Team Sheet
3:00 p.m. – 3:15 p.m.	Healthy Foods Break	IRIS ROOM
3:15 p.m. – 3:45 p.m.	Skills Session III: Navigating the Submission Process ◆ <i>Don Daves-Rougeaux, Assoc. Dir., Undergrad. Admissions, UCOP</i>	IRIS ROOM
3:45 p.m. – 5:20 p.m.	Curriculum Team Session III ▼ <i>Cross-Matching Math & CTE Course Content</i>	See Team Sheet
5:30 p.m. – 6:30 p.m.	General Assembly: Team Updates & Feedback	IRIS ROOM
6:30 p.m. – 7:30 p.m.	Dinner	MAIN LODGE

Tuesday, May 18

7:00 a.m. – 8:00 a.m.	Hot Breakfast	MAIN LODGE
8:00 a.m. – 8:10 a.m.	Logistics	IRIS ROOM
8:10 a.m. – 9:45 a.m.	Daily Topic Speaker ◆ <i>Dr. William Jacob, Vice Chair, BOARS of the UC</i>	IRIS ROOM
9:45 a.m. – 10:15 a.m.	Skills Session IV: Course Outline Mapping ◆ <i>Nina Costales, High School Articulation Analyst, UCOP</i> ◆ <i>Marianne Cartan, Educational Consultant, “a-g” Advisory Committee</i> ◆ <i>Lori Gomes, CTE Coordinator, Merced County Office of Education</i> ◆ <i>Pier Sun Ho, Assoc. Director of Curriculum Development, ConnectEd</i>	IRIS ROOM

Tuesday, May 18

10:15 a.m. – 10:30 a.m.	Healthy Foods Break	IRIS ROOM
10:30 a.m. – 12:00 p.m.	Curriculum Team Session IV ▼ <i>Mapping the Course Outline</i>	See Team Sheet
12:00 p.m. – 1:00 p.m.	Lunch	MAIN LODGE
1:00 p.m. – 2:55 p.m.	Curriculum Team Session V ▼ <i>Brainstorming Math & CTE Assignments</i>	See Team Sheet
3:00 p.m. – 3:40 p.m.	Nature Break	
3:45 p.m. – 5:20 p.m.	Curriculum Team Session VI ▼ <i>Course Outline Mapping & Integrating the Key Assignments</i>	See Team Sheet
5:30 p.m. – 6:30 p.m.	General Assembly: Check-in & Idea Interchange	IRIS ROOM
6:30 p.m. – 7:30 p.m.	Dinner	MAIN LODGE

Wednesday, May 19

9:00 a.m. – 10:00 a.m.	Hot Breakfast	MAIN LODGE
10:00 a.m. – 10:10 a.m.	Logistics	IRIS ROOM
10:10 a.m. – 11:15 a.m.	Daily Topic Speaker ◆ <i>Cheryl Hibbeln, Principal, School of Digital Media & Design</i>	IRIS ROOM
11:15 a.m. – 12:00 p.m.	Curriculum Team Session VII ▼ <i>Framing Instructional Strategies & Assessment Methods</i>	See Team Sheet
12:00 p.m. – 1:00 p.m.	Lunch	MAIN LODGE
1:00 p.m. – 3:00 p.m.	Curriculum Team Session VIII ▼ <i>Aligning the Key Assignments & Assessment Methods</i> ▼ <i>Revisiting the Course Purpose & Finalizing the Course</i>	See Team Sheet
3:05 p.m. – 3:45 p.m.	General Assembly: Team Presentations	IRIS ROOM
3:05 – 3:10 p.m.	Introduction	
3:15 – 3:20 p.m.	Team #1: Business Algebra	
3:25 – 3:30 p.m.	Team #2: Finance & Business: Algebra 1	
3:35 – 3:40 p.m.	Team #3: Business Statistics	
3:45 – 3:50 p.m.	Team #4: Da Vinci Algebra 1	
3:50p.m. – 4:00 p.m.	Closing Remarks	IRIS ROOM

Please note

- CURRICULUM TEAM SESSIONS

Organized according to four separate teams (Find your *Working Curriculum Team Sheet* in the following pages), all Curriculum Team Sessions will be held simultaneously in each of the following "break-out" meeting rooms:

- ❖ Team 1: BROOKSIDE
- ❖ Team 2: CEDAR 85
- ❖ Team 3: REDWOOD 50/51
- ❖ Team 4: VIOLET 47/48

- CELL PHONES

As a courtesy of our speakers and fellow UCCI Institute attendees, please silence your cell phones during all sessions of the conference.

UCCI Institute Curriculum Team #1

Team #1: Business Algebra

Room: BROOKSIDE

Facilitation Team:

Pier Sun Ho	ConnectEd	Associate Director of Curriculum Development
Sheryl Ryder	Napa County Office of Education	CA Business Ed Leadership Project Coordinator
Kimberly McGrath	Atascadero High School	Assistant Principal - Curriculum & Instruction
Susanne Kauer	University of California, Office of the President	Student Affairs Policy and Program Analyst

Team Members:

Mike Fischer	49er ROP / Placer County Office of Education	Director of Instruction
Danielle DeLuca	Atascadero High School	Math Instructor / Department Chair
Andrew Bressette	Fresno Unified School District / Roosevelt HS	Math Instructor
Rebecca Afghani	Long Beach Unified School District	Math Curriculum Leader
Annetta Leone	Long Beach Unified School District	Virtual Enterprise Instructor
Sue Coupland	North Santa Barbara County ROP	Business Instructor
David Dean	North Santa Barbara County ROP / Lompoc HS	Business Instructor
Sue Pettis	North Santa Barbara County ROP / Lompoc USD	Math Coach / Coordinator
Suzanne Phipps	North Santa Barbara County ROP / Santa Ynez HS	Math & Business Instructor

Course Conceptual Abstracts Submitted by Participants

49er ROP / Placer County Office of Education

Our job in writing good curriculum is to underscore the importance of core standards by showing how they apply to everyday life in an understandable, tangible way that will stick with high school students and make their learning meaningful. This means that every lesson, project, enrichment activity, and guest speaker must emphasize the lesson's purpose through real world examples. For example, Business Algebra students would use algebraic equations to predict real business situations, like finding the minimum number of attendees for a school dance to break even, or how many years a new synthetic turf athletic field must last in order to justify the investment.

Fresno Unified School District

We will be reviewing and analyzing our current course description to integrate Small Business Management. We will be reviewing courses with a specially designed Mathematics support course.

Long Beach Unified School District

We plan to begin with our existing Algebra I course outline which addresses all of the CA state standards for algebra I, and integrate key assignments which incorporate activities and projects that align with the Finance and Business CTE Industry sector and the Marketing, Sales and Service CTE Industry sector.

North Santa Barbara County ROP

This course is designed to provide students with entrepreneurial skills and exposure to all aspects of starting / operating a small business. Students will learn how to utilize business management and marketing principles to make decisions in the sale of goods and services. The course will also integrate concepts from algebra 1 and basic geometry such as the use of variables, equations, formulas, signed numbers, polynomials, factoring and graphing. Students will use these concepts in developing a methodical approach to problem solving.

UCCI Institute Curriculum Team #2

Team #2: Finance & Business: Algebra 1

Room: CEDAR 85

Facilitation Team:

Lori Gomes	Merced County Office of Education / ROP	Coordinator
Miya Hayes	University of Berkeley, California	"a-g" Consultant
Bernice Curtis	University of California, Office of the President	"c" Subject Area Expert
Hannah Frankel	University of California, Office of the President	CTE Administrative Analyst

Team Members:

Lee Kucera	Capistrano Valley High School	Math Instructor / Department Chair
Dean Schonfeld	Monrovia High School	Math Instructor / Department Chair
Kimberleigh Kopp	National University Virtual High School	Program Manager of Curriculum & Instruction
Nancy Pavelsky	Riverside County Office of Education	Director, CTE
Suzanne Potter	Riverside County Office of Education	CTE Coordinator / Principal
Shirley Roath	Riverside County Office of Education	Math Coordinator
Claire Spence	Riverside County Office of Education	Instructional Specialist
Michelle Roby	Riverside County Office of Edu. / Valley View HS	Personal Finance Instructor
Cyndi Whitton	Riverside County Office of Edu. / Rancho Verde HS	Business Instructor

Course Conceptual Abstracts Submitted by Participants

Capistrano Valley High School

Financial mathematics in the 21st century needs to include more than checkbooks and sales tax. Students need to learn how our financial system works, from banking and investments to running a business. This is one of the most important applications of mathematics but it is rarely covered in high school curriculum. Financial mathematics includes applications of mathematics from algebra I and II, geometry, statistics, precalculus, and calculus. Students need to use current technology, both graphing calculators and computers, to solve complex financial problems. They should also use the Internet as a resource for practice, discovery (applets), and research.

Monrovia High School

Would like to form a partnership with business / ROP people to develop a high school course that integrates mathematics and finance / business. The approach will be to start with a finance / business issue (e.g. a loan, or the experience curve) and develop the mathematics associated with it.

National University Virtual High School

Students will learn the basics of financial literacy and banking in this course. The course is designed to be online and include the following topics: bad debt, importance of spending plans, non-traditional financial services, being an informed consumer, buying stocks, sell strategies, mutual fund options, investing in education, planning for the future, purchasing a home, taxes and tax planning, and keeping money in perspective. The class will be taught using a variety of methods: musical lectures, assignments, assessments and a course project.

Riverside County Office of Education

Using the new Cengage text *Financial Algebra* as a primary guide, we will develop a course that explores the financial management concepts in business applications while reinforcing and introducing the mathematical content key to these applications. Business application examples are drawn from the stock market, banking, business ownership, consumer credit, employment basics, income taxes, personal finance, and independent living. Math content integrated into these applications includes concepts from algebra I, geometry, and algebra II.

UCCI Institute Curriculum Team #3

Team #3: Business Statistics

Room: REDWOOD 50/51

Facilitation Team:

Marianne Cartan	University of California "a-g" Advisory Committee	Educational Consultant
Kelly Schwirzke	Santa Clara County Office of Education	Coordinator, Online Learning
Renee Citlau	Anaheim Union High School District	Business Instructor
Reginald Hillman	University of California, Office of the President	Coordinator- Transfer Preparation Initiative

Team Members:

Janine Anderson	Fresno Unified School District / McLane HS	Business Instructor
Jeff Hopkins	Fresno Unified School District / Roosevelt HS	Business Instructor
Linda Jean Voth	Fresno Unified School District / Roosevelt HS	Business Instructor
Monica Ayala	John Muir High School	Math Instructor
Wendelin Donahue	John Muir High School	Lead Instructor, Bus & Entrepreneur Academy
Phillip Hoge	John Muir High School	History Instructor
Kathleen Parent	John Muir High School	English Instructor
Linda Thomas	John Muir High School	CTE Instructor
Rose Hennings	North Orange County ROP / Los Alamitos HS	Accounting / Entrepreneurship Instructor
Karen McConnell	North Santa Barbara County ROP	Business Instructor
Susan Beckman	Providence High School	Information Science Instructor / Dept. Chair
Devon Boyd	Providence High School	Director of Guidance & Counseling / Instructor

Course Conceptual Abstracts Submitted by Participants

Fresno Unified School District

We will be reviewing and analyzing our current course description to integrate Small Business Management. We will be reviewing courses with a specially designed mathematics support course.

John Muir High School

This course will train students in marketing foundations, functions, and strategies used to merchandise and sell services effectively in a competitive market. Students will learn how to apply math functions in a complex way to analyze market research program effectiveness data; learn the power and impact marketing, persuasion and propaganda have had on the public historically; and recognize and use persuasive language effectively and communicate clearly to a specific audience.

North Orange County ROP / Los Alamitos High School

Students will understand the mathematics concepts of number sense in solving problems involved in the accounting procedure of analyzing financial transactions, computing discounts, markups, and profits. In addition, students will learn applications of mathematical reasoning in the CTE focus of accounting principles and procedures from analyzing financial transactions, preparing work sheets, and preparing financial statements for management.

North Santa Barbara County ROP

This course is designed to provide students with entrepreneurial skills and exposure to all aspects of starting / operating a small business. The course will also integrate concepts from algebra 1 and basic geometry. Students will use these concepts in developing a methodical approach to problem solving.

Providence High School

Upon completion of the course, students will possess a working knowledge of GAAP (Generally Accepted Accounting Principles) principles. They will be prepared for college level accounting courses. They will also have a working knowledge of Peachtree accounting software, which is a generally accepted industry standard. These students will not only possess entry-level job skills, but will also have the ability to manage their own finances.

UCCI Institute Curriculum Team #4

Team #4: Da Vinci Algebra 1

Room: VIOLET 47/48

Facilitation Team:

Nina Costales	University of California, Office of the President	"a-g" Subject Area Expert
Carolina Reyes	University of California, Office of the President	CTE Program Analyst

Team Members:

Brad Berrett	Fresno Unified School District / McLane HS	Business Instructor
Amy Eleazarian	Fresno Unified School District / Roosevelt HS	Math Instructor
Janna Gard	South Tahoe High School	Curriculum Consultant
Bob Grant	South Tahoe High School	VPA Instructor / Department Chair
Ivone Larson	South Tahoe High School	Principal
Kristi Leonard	South Tahoe High School	Math Instructor
Candi Lincoln	South Tahoe High School	CTE Instructor
Michelle Reilly	South Tahoe High School	Director of Guidance

Course Conceptual Abstracts Submitted by Participants

Fresno Unified School District

We will be reviewing and analyzing our current course description to integrate Small Business Management. We will be reviewing courses with a specially designed Mathematics support course.

South Tahoe High School

Through the integration of algebra, geometry and digital media arts, students will expand their knowledge of linear functions and apply it to linear problems related to the arts, media, and entertainment CTE industry sector. Additionally, through the study of animation integrated with geometry, students will deepen their understanding of the illusion of motion.

Daily Topic Speaker Biographies

Dr. Lloyd McCabe

Senior Policy Consultant, Secondary, Career, & Adult Learning Division, California Department of Education

Lloyd McCabe joined the California Department of Education in 1989 as an agricultural education consultant. Currently, he serves as the Senior Policy Consultant to the Secondary, Career, and Adult Learning Division Director. He oversees secondary education reform policies and research initiatives, qualifying CTE courses that meet UC admission requirements, and Division lead on meeting the “highly qualified teacher” provision of the No Child Left Behind (NCLB) Act.

Prior to his position with the Department, Dr. McCabe was a high school agriculture department chairperson at Chowchilla Union High School for twelve years. Under his direction, the Chowchilla program became one of the largest agriculture programs in the nation. He was the first CTE teacher in California to develop three different agriculture courses to meet UC admission requirements and has been a leading advocate of “raising academic expectations” through rigorous CTE courses. Dr. McCabe’s “cutting edge” philosophies earned him educational awards including: State & National Agriscience Teacher of the Year, State Vocational Education Program of the Year, and the State CATA Teacher of Excellence.

Dr. Susan A. Wilbur

Director of Undergraduate Admissions, University of California, Office of the President

Susan Wilbur is the University of California’s systemwide admissions director, a position she has held since 2003. Her particular focus at the Office of the President is working with faculty in the design and implementation of the University’s freshman and transfer admissions policies. She manages the University’s admissions applicant system, UC’s “a-g” course approval process, and the University’s transfer admissions initiatives including UC’s course articulation policies. She also oversees the management of the University’s Eligibility in the Local Context Program, and the Analytical Writing Placement Examination. She represents the University of California in the oversight of ASSIST – California’s intersegmental articulation system – and is currently serving on the Advanced Placement Higher Education Advisory Board. In the last few years, much of her time has been devoted to the development of the University’s new freshman admissions requirements; advancing the acceptance of academically rigorous Career Technical Education courses in fulfillment of the University’s “a-g” freshman admissions requirements, and a host of issues surrounding smoothing the transfer pathway.

Tom Moore

Mathematics and Construction Instructor, Loveland High School, Colorado

Tom Moore has 30 years experience teaching mathematics from seventh grade math through Trigonometry / Functions in Missouri and Colorado. He has built two homes, and spends his summers working with high school youth remodeling homes for elderly, handicapped, and single moms in a volunteer program. Mr. Moore has vocational credentials in Applied Mathematics and Construction. He wrote the geometry curriculum for Geometry in Construction. Currently, he works with the Geometry in Construction Program at Loveland High School and Mountain View High School in Colorado. He is very proud of his students’ involvement in building a home for a homeless family. Geometry in Construction fulfills a ten-year dream. Mr. Moore conducts teacher in-services, cooperative learning, and implementing activities into the math classroom.

Scott Burke

Industrial Technology Department Chair, Loveland High School, Colorado

Scott Burke is in his sixth year of teaching at Loveland High School and serves as the Industrial Technology Department Chair. He teaches courses in automotive, drafting, electronics, and construction. Mr. Burke received a Master's degree in Educational Leadership and a Bachelor's degree in Technology Education and Training with an emphasis on construction and building trades. His vocational credentials include construction and building trades, drafting, and vocational director. His professional goals include management and leadership of a school district as Assistant Principal or Vocational CTE Director. Mr. Burke's interest in the course Geometry in Construction demonstrates his passion for connecting academic curriculum to real world situations, which helps students understand the relevance of vocational CTE programs to core curriculum content. When he shares his knowledge of building and construction, he often relates his personal experiences of growing up in Colorado and building a family cabin in the mountains. In his spare time, he enjoys hunting, swimming, watching movies, and spending time with family and friends.

Dr. William Jacob

*Vice Chair, Board of Admissions and Relations with Schools of the University of California
Mathematics Professor, University of California, Santa Barbara*

Bill Jacob is a professor of mathematics at the University of California, Santa Barbara. His mathematical research for the past thirty years has focused on algebra. He also develops and teaches courses for undergraduates preparing for teaching careers. Over the past twenty years he has designed and led numerous professional development programs for pre- and in-service K-12 teachers. For the past ten years he has been a partner with Mathematics in the City at the City College of New York and as part of that work co-authored instructional materials for elementary school that use inquiry-based approaches to develop early algebra.

His current research project studies the role of context in the development of algebraic thinking and pre-service teachers abilities to understand this thinking in children's work. Heinemann published his third book, *Young Mathematicians at Work Constructing Algebra*, joint with Catherine Fosnot, in March 2010. Professor Jacob is currently Vice Chair of the Board of Admissions and Relations with Schools (BOARS) of the University of California.

Cheryl Hibbeln

Principal, The School of Digital Media and Design, Kearny Educational Complex, SDUSD

Cheryl Hibbeln is the Principal of the School of Digital Media and Design (DMD) at the Kearny Educational Complex, a Bill and Melinda Gates Reconversion School founded in 2004. The School of DMD is an autonomous, interdisciplinary, project-based school. With a strong focus on an interdisciplinary UC "a-g" standards-based curriculum, Cheryl's staff has been able to increase student achievement at their school by 126 points on the California API scale in four years. The School of DMD has been named a California Title One Academic Achievement Award Winner in 2008, 2009, and 2010; a *US News and World Report* Bronze Medal Winner in 2009 and 2010; and a California Distinguished School in 2009. Prior to becoming an administrator, Cheryl worked as a literacy administrator, literacy peer coach, and English teacher at the comprehensive Kearny High School. She was also one of three teachers in Kearny's Global Affairs Institute, a unique program that combined literature, social science and technology to ready students for a global society - a model which became the foundation for the design of the School of DMD.

Cheryl earned her bachelor's degree at California State University, San Marcos in Literature and Writing, and her Masters Degree/Administrative Credential at Chapman University.

Recognition

Special Acknowledgements to:

The California Department of Education (CDE)

The University of California Curriculum Integration Institute was fully funded by a generous grant from CDE.

The Steering Committee for Career Technical Education Initiative

University of California President Mark Yudof formed the Steering Committee for Career Technical Education to support and guide UC's efforts to develop Career Technical Education curriculum that would meet the University's "a-g" subject area criteria. The Steering Committee reviewed different options and concluded that the University of California Curriculum Integration Institute provided an excellent model for addressing the challenges of integrated course development.

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*Board of Admissions and Relations with Schools
University of California, Santa Barbara*

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Special Thanks to:

All participants, speakers, facilitators, and staff of the inaugural University of California Curriculum Integration Institute, Spring 2010.

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Event Vendors

UCLA Lake Arrowhead Conference Center

For providing all accommodations, meals, airport shuttles, and audio / visual equipment.

Greenerprinter, Berkeley, CA

For printing UCCI Institute materials on FSC-certified, high post-consumer recycled paper with soy & vegetable-based inks low in Volatile Organic Compounds (VOCs). Thank you for making the UCCI Institute a more environmentally responsible event.

Officemax, *Many of the office supplies used at this institute are made with biodegradable and recycled content.*

Environmental Benefits Statement

By using Greenerprinter and the recycled paper selected for printing the materials of this conference, the University of California Curriculum Integration Institute is conserving the following resources:

Pounds of Wood	Gallons of Water	Pounds of Solid Waste	Pounds of Greenhouse Gases	Miles in a Car
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Resources: CTE & CIP

The UC and Career Technical Education (CTE)

UC faculty and staff are working diligently with academic and career technical educators from schools across the state to encourage new course submissions of CTE courses for UC-approval in all “a-g” subject areas. Academically rigorous CTE courses differ substantially from traditional vocational education, which often serves to track students into work-only prospects after high school.

Over the past ten years, the number of CTE courses accepted for “a-g” approval has increased dramatically. Today, over 9,000 CTE courses offered in California high schools are approved for “a-g” credit. Despite this expansion, many of these courses fall under either the “d”- laboratory science, “f”- visual & performing arts or “g”- college preparatory elective subject areas. Since certain CTE pathways align well with these specific subject areas, it has been challenging for educators to find and develop linkages with other disciplines, including English, history/social sciences and mathematics. For this reason the University of California Curriculum Integration (UCCI) Institute supports curriculum development in “a-g” subject areas and CTE industry sectors that are low in course submissions. Once the courses developed at the UCCI Institute have been reviewed and approved by faculty, the courses will be made available for any high school in California to add onto their own “a-g” course list and teach at their school.

We look forward to collaborations with all high school educators and staff so that together we may better prepare California’s students with coursework, which not only provides them with a strong academic foundation, but also the technical skills that will enable them to access and succeed in post-secondary education and future careers in an increasingly competitive knowledge-based and global economy.

For further information on our work in Career Technical Education, CTE course guidelines, and additional resources, please visit: www.ucop.edu/a-gGuide/ag/cte/

To access the *California Career Technical Education Model Curriculum Standards (2005)* and the *California Career Technical Education Framework for California Public Schools (2007)*, please visit: <http://www.cde.ca.gov/ci/ct/sf/>

The Curriculum Integration Project (CIP)

<http://www.ucop.edu/a-gGuide/ag/cte/cip.html>

The UC “a-g” Guide Project is seeking applicants for the Curriculum Integration Project, which aims to develop model “a-g” courses that effectively integrate academic rigor and career-technical skills. The intent is to begin with the outline of the academic course and infuse relevant career-technical skills as a laboratory, field study, or practicum experience that deepens a student’s understanding of the course’s academic foundations and relevance. The Curriculum Integration Project expects that at least two teachers, one academic and one career-technical, will work together to create the course outline/description.

Each selected team will be granted up to \$5,000: a stipend of \$1,000 for each of the two key teachers and \$3,000 for instructional costs. Applications are accepted on a rolling basis. For more details and to apply, please visit: <http://www.ucop.edu/a-gGuide/ag/cte/cip.html>

Resources: Math Policy & The Cadre

New Policy Guidance for Mathematics

The new “c”- mathematics subject area guidelines are effective for courses submitted in the 2010-11 course submission cycle. Please review the updated guidelines on the “a-g” Guide: http://www.ucop.edu/a-gGuide/ag/a-g/math_reqs.html

To better understand the mathematics that students need to know to be successful in college, please read the new 2009 *Statement on Competencies in Mathematics* from the Intersegmental Committee of the Academic Senates (ICAS) of the California Community Colleges, the California State University, and the University of California. The *Statement on Competencies in Mathematics* is available on the “a-g” Guide: http://www.ucop.edu/a-gGuide/ag/a-g/math_reqs.html

Coursework approved under the “c”- mathematics subject area needs to demonstrate how students acquire these competencies. Merely listing the California standards that are covered throughout the course is not sufficient. In addition to the guidance available on the “a-g” Guide website, here are two UC designated standards that will assist you in the development of mathematics curriculum:

California Standards and Frameworks

<http://www.cde.ca.gov/ci/ma/>

Information that all students in California public schools should know and be able to do in mathematics, emphasizing computational and procedural skills, conceptual understanding, and problem solving. Here you can find the 2011 *Mathematics Framework Update*, as well as the *California Content Standards, Curriculum Frameworks, Instructional Materials, and Recommended Literature for Mathematics*.

Principles and Standards for School Mathematics

<http://www.nctm.org/standards/content.aspx?id=3198>

Principles and Standards for School Mathematics for grades 9-12 was created by the National Council of Teachers of Mathematics (NCTM). These standards establish a foundation for school mathematics programs by considering the broad issues of equity, curriculum, teaching, learning, assessment, and technology. *Principles and Standards for School Mathematics* consist of an ambitious and comprehensive set of goals for mathematics instruction under ten different standards, which describe the basic skills and understandings that students will need to function effectively in the twenty-first century.

The Cadre of Experts

<http://www.ucop.edu/a-gGuide/ag/support.php>

This online database is another great resource that connects you with a range of UC-trained curriculum specialists to assist in curriculum development and writing of course content and descriptions that meet the UC “a-g” subject area requirements. These individuals have expertise in a range of different curricular disciplines, serve in varied professional capacities, represent different sectors of education and different school types, and work in all regions of the state. Cadre members are eager to assist in any way they can, please do not hesitate to contact them.

Resources: UC Links

The “a-g” Guide

<http://www.ucop.edu/a-gGuide>

High school educators should be familiar with this essential online resource tool. The “a-g” Guide provides key information on “a-g” course criteria, CTE development, the course approval process, and policy updates to assist you with designing courses that meet both the UC “a-g” subject area requirements and statewide curricular reform efforts.

The Doorways Portal

<http://doorways.ucop.edu>

The UC Doorways website is a portal that allows easy access to the three UC websites related to the “a-g” subject area requirements: (1) the Course List site, (2) the “a-g” Guide site, and (3) the Online Update site. Please note the *deadline* for new course submissions for the 2010-2011 update cycle is: September 19, 2010 at midnight.

The Directory

UCCI Institute Directory of Participants

Spring 2010 Focus: Math Subject Area; Finance & Business CTE Industry Sector

The University of California would like to encourage continued communication and future collaboration between high school educators and staff from different schools and districts across California as well as subject area specialists and UC staff. You will find in the following pages the Spring 2010 UCCI Institute Directory, which we hope you will utilize in your future efforts to develop new rigorous academic curriculum infused with technical and occupational skills. To update your information, please email: hsupdate@ucop.edu.

The UCCI Institute Directory

Spring 2010: "c" - Math Subject Area, Finance and Business CTE Sector

Institution	First Name	Last Name	Position/Title	Phone	E-mail
49er ROP / Placer County Office of Education	Mike	Fischer	Director of Instruction	(530) 889-5963	mfischer@placercoe.k12.ca.us
Anaheim Union High School District	Renee	Citlau	Business Instructor	(714) 595-9158	citlau_r@auhsd.k12.ca.us
Atascadero High School	Danielle	DeLuca	Math Instructor / Department Chair	(619) 985-0494	ddeLuca@atas.k12.ca.us
Atascadero High School	Kimberly	McGrath	Assistant Principal, Curriculum & Instruction	(805) 406-8713	kmcgrath@atas.k12.ca.us
California Department of Education	Joe	Radding	Education Programs Consultant	(916) 323-5635	jradding@cde.ca.gov
California Department of Education	Lloyd	McCabe	Senior Policy Consultant	(916) 445-1710	lmccabe@cde.ca.gov
Capistrano Valley High School	Lee	Kucera	Math Department Chair / Instructor	(949) 364-6100	lekucera@cox.net
ConnectEd: The California Center for College and Career	Pier	Sun Ho	Associate Director, Curriculum Development	(510) 849-4945	psunho@connectedcalifornia.org
John Muir High School	Kathleen	Parent	English Instructor	(626) 396-5600	KPARENT28@PUSD.US
John Muir High School	Linda	Thomas	CTE Instructor	(626)396-5600	linda.thomas78@yahoo.com
John Muir High School	Monica	Ayala	Math Instructor	(626) 396-5600	mayala@pusd.us
John Muir High School	Philip	Hoge	History Instructor		phoge64@pusd.us
John Muir High School	Wendelin	Donahue	Lead Instructor, Business & Entrepreneurship Academy	(626) 396-5600	wdonahue65@pusd.us
Lompoc Unified School District	Susan	Pettis	Math Coach / Coordinator	(805) 742-2937	pettis.susan@lusd.org
Long Beach Unified School District	Anetta	Leone	ROP Instructor	(562) 425-7441	aleone@lbschools.net
Long Beach Unified School District	Rebecca	Afghani	Math Curriculum Leader	(562) 997-8000	rafghani@lbusd.k12.ca.us
Loveland High School	Scott	Burke	Industrial Technology Dept. Chair	(970) 219-5020	scott@contextuallc.com
Loveland High School	Tom	Moore	Math & Construction Instructor	(970) 744-1048	tom@contextuallc.com
McLane High School	Brad	Berrett	Business Instructor	(559) 875-6055	Bradley.Berrett@fresnounified.org
McLane High School	Janine "Holle"	Anderson	Business Instructor	(559) 323-8325	janine.andersen@fresnounified.org
Merced County Office of Education	Lori	Gomes	CTE Coordinator	(209) 381-6682	lgomes@mcoe.org
Monrovia High School	Dean	Schonfeld	Math Instructor	(626) 471-2800	schonfeld.dean@gmail.com
Napa County Office of Education	Sheryl	Ryder	CA Business Education Leadership Project Coordinator	(707) 344-4324	sryder@ncoe.k12.ca.us
National University Virtual High School	Kimberleigh	Kopp	Program Manager, Curriculum & Instruction	(858) 642-8829	kkopp@nuvhs.org
North Orange County ROP / Los Alamitos HS	Rose	Hennings	Entrepreneurship, Business Finance & Accounting Instructor	(562) 756-5864	rhennings@losal.org
North Santa Barbara County ROP	Karen	McConnell	Business Instructor	(805) 680-2415	kmccconnell@smjuhsd.org
North Santa Barbara County ROP	Sue	Coupland	Math / Business Instructor	(805) 974-2983	coupland.susan@lusd.org
North Santa Barbara County ROP / Lompoc HS	David	Dean	Math / Business Instructor	(805) 717-0342	dean.david@lusd.org
North Santa Barbara County ROP / Santa Ynez HS	Suzanne	Phipps	Math & ROP Business Instructor	(805) 937-8427	sphipp@syuhsd.org
Providence High School	Devon	Boyd	Director, Guidance & Counseling / Instructor	(818) 400-9881	devon.boyd@providencehigh.org
Providence High School	Susan	Beckenham	Info. Science Dept. Chair / Instructor	(626)226-6417	susan.beckenham@providencehigh.org

The UCCI Institute Directory

Spring 2010: "c" - Math Subject Area, Finance and Business CTE Sector

Institution	First Name	Last Name	Position/Title	Phone	E-mail
Riverside County Office of Ed / Rancho Verde HS	Cyndi	Whitton	Business & Fashion Instructor	(951) 202-4690	cfwhitton@aol.com
Riverside County Office of Education	Clarie	Spence	Instructional Specialist	(951) 826-6535	cspence@rcoe.us
Riverside County Office of Education	Nancy	Pavelsky	Director II	(951) 826-6797	npavelsky@rcoe.us
Riverside County Office of Education	Shirley	Roth	Math Coordinator	(951) 826-6408	sroath@rcoe.us
Riverside County Office of Education	Suzanne	Potter	Coordinator / Principal	(951) 826-6793	spotter@rcoe.us
Roosevelt High School	Amy	Eleazarian	Math Instructor	(559) 696-5038	amy.eleazarian@fresnounified.org
Roosevelt High School	Andrew	Bressette	Math Instructor	(802) 922-1886	andrew.bressette@fresnounified.org
Roosevelt High School	Jeff	Hopkins	Math / Business Instructor	(559) 970-6149	jeff.hopkins@fresnounified.org
Roosevelt High School	Linda Jean	Voth	Math / Business Instructor	(559) 246-0297	linda_jean.voth@fresnounified.org
Santa Clara County Office of Ed, Region 5	Kelly	Schwirzke	Coordinator, Online Learning	(831) 359-1778	kelly_schwirzke@sccoe.org
South Tahoe High School	Bob	Grant	Visual & Performing Arts Chair / Instructor	(530) 545-0521	bgrant@ltusd.org
South Tahoe High School	Candi	Lincoln	Digital Media / Math Instructor	(530) 541-4111	clincoln@ltusd.org
South Tahoe High School	Ivone	Larson	Principal	(530) 543-2253	ilarson@ltusd.org
South Tahoe High School	Janna	Gard	Curriculum Consultant	(530) 694-9167	gardino@mac.com
South Tahoe High School	Kristi	Leonard	Math Instructor	(530) 541-4111	kleonard@ltusd.org
South Tahoe High School	Michelle	Reilly	Director of Guidance	(530) 541-4111	mreilly@ltusd.org
The School of Digital Media and Design	Cheryl	Hibbeln	Principal	(619) 208-1097	chibbeln@sandi.net
UC "a-g" Guide Advisory Committee	Marianne	Cartan	Educational Consultant	(530) 265-8227	marcartan@sbcglobal.net
UC, Berkeley: Center for Educational Partnerships, School / University Partnerships	Miya	Hayes	Assistant Director	(510) 851-1834	miyahay@berkeley.edu
UC, Los Angeles: Institute for Democracy, Education & Access (IDEA)	Claudia	Bustamante	Director of Communications	(310) 267-4408	bustamante@gseis.ucla.edu
University of California, Office of the President	Bernice	Curtis	Math Subject Analyst	(951) 686-7544	bcurtis3@earthlink.net
University of California, Office of the President	Carolina	Reyes	CTE Project Analyst	(510) 987-0906	Carolina.Reyes@ucop.edu
University of California, Office of the President	Don	Daves-Rougeaux	Associate Director, Undergraduate Admissions	(510) 987-9552	Don.Daves-Rougeaux@ucop.edu
University of California, Office of the President	Hannah	Frankel	CTE Administrative Analyst	(510) 987-9636	hannah.frankel@ucop.edu
University of California, Office of the President	Nina	Costales	High School Articulation Analyst	(510) 987-0048	nina.costales@ucop.edu
University of California, Office of the President	Reginald	Hillmon	Coordinator, College Access and Preparation - Transfer Initiatives	(510) 987-0127	reginald.hillmon@ucop.edu
University of California, Office of the President	Sheri	Najafi	CTE Project Coordinator	(415) 730-1717	sheri.najafi@gmail.com
University of California, Office of the President	Susan	Wilbur	Director, Undergraduate Admissions	(510) 987-9565	susan.wilbur@ucop.edu
University of California, Office of the President	Susanne	Kauer	Policy and Program Analyst	(510) 587-6195	susanne.kauer@ucop.edu
University of California, Santa Barbara	Bill	Jacob	Professor of Mathematics	(805) 967-7325	jacob@math.ucsb.edu
Valley View High School	Michelle	Roby	Personal Finance Instructor	(951) 571-4850	mroby@mvusd.net
WestEd	June	Lee-Bayha	Senior Research Associate	(858) 837-1360	jlee@wested.org

Resource Links

For “a-g” Course Development:

“a-g” Guide

<http://www.ucop.edu/a-gGuide>

Provides information on the “a-g” requirements and CTE guidance, including useful tools and resources to assist in the course development and UC submission process.

UC Doorways

<http://doorways.ucop.edu>

The Doorways portal allows easy access to the three UC sites related to the “a-g” subject area requirements: (1) the Course List site, (2) the “a-g” Guide site, and (3) the Online Update site.

UC Counselor Conference

<http://www.universityofcalifornia.edu/educators/counselors/resources/materials/conferences.html>

Here you can access important materials from the University of California’s 2009 Counselor Conferences. Topics include: UC news; policy updates on articulation, admissions, and selection; and counseling fundamentals.

CA Standards & Frameworks for Mathematics

<http://www.cde.ca.gov/ci/ma/>

All of the state content standards and guidelines adopted by the California State Board of Education were designed to encourage the highest achievement of every student, by defining the knowledge, concepts, and skills that students should acquire at each grade level. The CA content standards and frameworks are available for download.

CA Standards & Frameworks for Career Technical Education: Business & Marketing Industry Sectors

<http://www.cde.ca.gov/ci/ct/bm/>

The CA State Board of Education provides CTE program information in the areas of marketing, finance, accounting, information technology, entrepreneurship, and economics. The *CA Career Technical Education Model Curriculum Standards* (2005) and *CA Career Technical Education Framework for California Public Schools* (2007) are available for download.

National Council of Teachers of Mathematics (NCTM): Principles & Standards for Math

<http://www.nctm.org/standards/content.aspx?id=3198>

Principles and Standards for School Mathematics for grades 9-12 was created by NCTM, and incorporates a sharper focus on how students’ knowledge grows as shown by recent research.

NCTM is a global leader of mathematics education, supporting teachers to ensure equitable mathematics learning of the highest quality for all students through vision, leadership, professional development, and research.

Recommended:

California Subject Matter Project (CSMP)

<http://csmp.ucop.edu/>

CSMP is a statewide network of nine different subject-specific professional development programs for teachers administered by UCOP. CSMP sites are regional collaborative programs that bring together K-12, college, and university faculty in a variety of institutes and yearlong programs. CSMP is committed to: (1) Raising the level of teacher content and pedagogical content knowledge, (2) Providing on-going teacher leadership development, (3) Building teacher learning communities, (4) Strengthening existing partnerships with low-performing schools and creating new ones, and (5) Supporting teachers of English learners.

Career Academy Support Network (CASN)

<http://casn.berkeley.edu/>

CASN offers professional development, materials, and coaching in support of improving high schools, particularly through Small Learning Communities (SLCs) and Career Academies.

ConnectEd:

The California Center for College & Career

<http://www.connectedcalifornia.org/>

ConnectEd is dedicated to advancing practice, policy, and research in support of the development of Linked Learning (formerly known in California as “Multiple Pathways”) and the pathways by which California’s young people can complete high school, enroll in postsecondary education, attain a formal credential, and embark on lasting success in the world of work, civic affairs, and family life.

EdSource, Issues & Research Overview

http://www.edsource.org/iss_overview.html

EdSource is an independent, nonpartisan, nonprofit organization whose mission is to clarify complex education issues and to promote thoughtful policy decisions about public school improvement. EdSource provides K–12 education information, research, analysis, and data related to important issues in education.

National Research Center for Career & Technical Education (NRCCTE)

<http://136.165.122.102/mambo/content/view/43/56/>

NRCCTE is the primary agent for generating scientifically based knowledge, dissemination, professional development, and technical assistance to improve Career Technical Education (CTE) in the US. One of NRCCTE’s center issues is the Math-in-CTE, a curriculum integration model designed to enhance mathematics in CTE content.

“TELL ME AND I'LL FORGET.
SHOW ME, AND I MAY NOT REMEMBER.
INVOLVE ME, AND I'LL UNDERSTAND.”

NATIVE AMERICAN PROVERB