

CHANGING SYSTEMS, CHANGING LIVES

The Broader Impact *of the* College & Career Transitions Initiative

Elisabeth A. Barnett, *Editor*



League for Innovation
in the Community College

with support from



CONTENTS

Foreword / PG 3

College and Career Transitions Initiative / PG 4

CCTI and Systems Change / PG 4

Expanded Use of Career Pathways / PG 5-7

Creating Statewide Teacher Preparation Pathways From High School Through University, Maricopa Community College District, by Cheri St. Arnauld

The St. Louis Regional Engineering Academy: Building a Regional Pathway to College and Careers, St. Louis Community College, by Ashok Agrawal

The San Diego and Imperial County (Region X) Regional Articulation Project, San Diego Community College, by Lynne Ornelas and Mara Palma-Sanft

Improved Academic Instruction / PG 8-9

Improving High School Math Instruction Through Partnerships, Sinclair Community College, by Margaret Draeger

Involving High School and College Faculty in Improving Higher Level Reading Skills, Lehigh Carbon Community College, by David L. Fallinger

Improved CTE Instruction / PG 10-11

Strategies for Successful Student Engagement in the Teacher Education Exploration (TEE) Program, Lorain County Community College, by Karen Wells and Tammy Macek, with Helen Dronsfield and Gylene Pelton

Making Summer Count With Hands-On Learning in a Hospital Setting, Miami Dade College, by Jackeline Estay

Preparation for College-Level Work / PG 12-13

Fox Valley Technical College Meets Remediation Needs With GOAL-to-Go, Fox Valley Technical College, by Mary Hansen

Gaining Entry to the Health Professions: Partnering to Improve Students' Reading, English, and Math, Northern Virginia Community College, by Charles Whitehead

High School-College Partnerships / PG 14-15

Aligned Education Systems as the Key to Smooth Transitions, Anne Arundel Community College, by Andrew Meyer and Kathleen Beauman

High School and College Faculty Bridge the Communications Gap With Talk Time, Corning Community College, by Linda L. Miller

Education-Business Partnerships / PG 16-17

TechConnect Clubs Connecting Students to the Future, Central Piedmont Community College, by Ron Williams

Strong Education and Business Partnerships Create a Ripple Effect, Ivy Tech Community College, by Rosalie Hine

Advising and Student Success / PG 18-19

MEtaMorph: Early Signposts on the Learning Journey, Sinclair Community College, by Ron Kindell

Minority Mentoring Through the ALANA Program, Prince George's Community College, by Donna Gaughan

CTE and Data-Driven Decision Making / PG 20-21

Using CCSSE and HSTW-TAV to Improve Student Experiences, Southwestern Oregon Community College, by Bill Yates

References / PG 21

Acknowledgements / PG 22

FOREWORD

Although the College and Career Transitions Initiative (CCTI) was created with very specific outcomes, it could hardly be classified as a cookie-cutter initiative. It was obvious that the work of CCTI should focus on decreasing the need for remediation at the postsecondary level, increasing postsecondary entrance rates, and increasing persistence and success at the postsecondary level; however, each of the fifteen CCTI pilot sites was asked to scan its local situation to determine how to frame success in helping improve student transitions from secondary to postsecondary education and on to successful careers. To that end, each site developed a site improvement plan that guided its work in CCTI.

Elisabeth Barnett notes early in this report that “the College and Career Transitions Initiative (CCTI) has engaged high schools, colleges, and businesses in a process to improve career and technical education systems, programs, strategies, and outcomes.” She also points out that, “unlike many initiatives that involve the provision of a set of services to narrowly defined groups of students, CCTI pilots have resulted in changes that influence the lives of many students.” Indeed, CCTI has grown from a relatively small project to one that promises to have a major impact on how we look at both career technical education and academic programs.

The need for improved student transitions alone can illustrate the impact of this initiative. In the United States, only two-thirds of ninth graders finish high school on time. A much lower percentage of students who have postsecondary education and training aspirations actually enroll in higher education institutions. Sixty percent of students who enroll in America’s community colleges are required to take at least one remedial course, a factor that contributes to an unacceptably high dropout rate early in the postsecondary experience. We must do better, and CCTI is proving that we can.

CCTI’s success stems from a fundamental belief that all students are preparing for their life’s work, and most need to acquire postsecondary education to qualify for a job that will support a family. Thus, all students are both going to college and preparing for jobs. In the past, we have tended to separate these groups. Now we recommend that all students take rigorous academic programs and some career and technical education (CTE) courses in high school. Add dual enrollment leading to college credit earned in high school, as well as increased assessment of high school students for college readiness, and the connection between secondary and postsecondary education strengthens.

Students, parents, counselors, and faculty appear to benefit from an improved focus on aligning secondary and postsecondary education with careers. Students appear to like knowing the answer to the “Why do I have to learn this?” question. Linking education and work has always made sense. Now, through the work of the CCTI pilot sites, we have career pathways templates to map out academic and CTE coursework that will lead to a career in one of the occupations in a given career pathway. As simple as it might seem, it works.

This book is a collection of stories of unintended consequences, or the broader impact of CCTI. Put together by one of the initiative’s qualitative research team members, Elisabeth Barnett, and written by people at the CCTI pilot sites, it includes information about several promising systems changes that CCTI has brought about at those sites.

We think these changes are indicative of more to come. After all, we are changing systems to change lives, for the better.

Gerardo E. de los Santos, President and CEO

Laurance J. Warford, CCTI Project Director and Senior Workforce Consultant
League for Innovation in the Community College

COLLEGE AND CAREER TRANSITIONS INITIATIVE

The College and Career Transitions Initiative (CCTI) is a ground-breaking, five-year project initiated in 2001 with funding from the Office of Vocational and Adult Education of the U.S. Department of Education. The initiative was developed and is spearheaded by the League for Innovation in the Community College, an international organization working toward the advancement of community colleges. Designed to create partnerships among high schools, community colleges, and businesses, the project focuses on the development of career pathways. In these pathways, students participate in sequenced academic and career-technical courses, along with other educational experiences, starting in the ninth grade and culminating with a certificate, associate degree, or more advanced degree. The pathways are designed to lead to high-demand, high-wage jobs in the local labor market.

The purpose of CCTI is to strengthen the role community and technical colleges play in easing student transitions between secondary and postsecondary education, as well as the transition to employment, and improving academic performance at both the secondary and postsecondary levels (CCTI, 2007a). To fulfill this purpose, 15 colleges were chosen to create pathways and programs that could serve as models to others. The participating colleges were selected for excellence in occupational education. They are widely dispersed around the U.S. and have undertaken the development of career pathways in the following five areas: Health Science; Information Technology; Science, Technology, Engineering, and Mathematics; Education and Training; and Law, Public Safety, and Security.

Each participating college developed a series of strategies to address the five CCTI project objectives: (1) decreased need for remediation at postsecondary level; (2) increased enrollment and persistence in postsecondary education; (3) increased academic and skill achievement at secondary and postsecondary levels; (4) increased attainment of postsecondary degrees, certificates, or other recognized credentials; and (5) increased entry into employment or further education.

To assess the development of the models, ongoing quantitative and qualitative evaluation has been conducted. Results indicate that all sites have made progress in the development of career pathways and all are serving students at the high school and college levels. In addition, many are contributing to changes in the larger education and community systems of which they are part. This report highlights the contributions of the CCTI project that go above and beyond the services provided to students enrolled in CCTI pathways, focusing instead on ways CCTI is contributing to improved educational opportunities and policies at the local, state, and national levels.

CCTI AND SYSTEMS CHANGE

The College and Careers Transition Initiative (CCTI) has engaged high schools, colleges, and businesses in a process to improve career and technical education systems, programs, strategies, and outcomes. Unlike many initiatives that involve the provision of a set of services to a narrowly defined group of students, most CCTI projects have resulted in changes that influence the lives of many students in addition to those who are officially enrolled. This has taken place in several ways. CCTI career pathways, designed to smooth transitions for students in specific career areas, have often been replicated in other career areas, thus broadening the impact of the initiative. CCTI colleges have developed strategies or program activities to benefit their CCTI students that are then made available to many other students. Partners who became involved through CCTI have looked for ways to broaden the relationship. High school and college administrators and faculty are developing new joint initiatives. Business groups are expanding their involvement. Finally, state, college, and community leaders looking for solutions to important problems are turning to CCTI models and partners for guidance. In some cases, CCTI projects have been explicitly designed to pilot ideas that are likely to have broader applications.

To identify the most frequently found and promising of these systems changes, an analysis was done of 15 case-study reports written by the CCTI Qualitative Evaluation Team—Terry O'Banion, Debra Bragg, and Elisabeth A. Barnett—during the 2004-05 academic year. In many cases, important systems changes were identified, even while there were sometimes limited numbers of students officially enrolled in the programs.

While numerous examples of systems changes were found, the following stood out because of their importance, because they were observed at multiple sites, and because research indicates that they contribute to student success: expanded use of career pathways; improved academic instruction; improved CTE instruction; measures to improve college readiness; high school-college partnerships and articulation; education-business partnerships; advising and student success initiatives; and data-driven decision making.

Some of these changes have involved community colleges, while others involve high schools; some involve both. In a number of cases, business partners played a key role as well. Each of these systems changes influenced the educational opportunities available to a wide range of students. In the following sections of this report, each of these types of systems change is described in general terms. We discuss why each is important and include illustrative examples from among the CCTI sites.

EXPANDED USE OF CAREER PATHWAYS

Career pathways have existed as a conceptual model for many years, becoming much more prominent in recent years. A career pathway is defined on the CCTI website as “a coherent, articulated sequence of rigorous academic and career courses beginning in ninth grade and leading to an associate degree and/or industry-recognized certificate or licensure, and/or to the baccalaureate and beyond” (CCTI 2007b). Jenkins and Spence (2006) note that one size does not fit all when it comes to career pathways. Rather, pathways are developed locally in partnerships among educators, employers, and community members to address local needs. By building on existing programs and adding new ones, career pathways enable students to refine their knowledge and skills, allowing them access to better jobs and more opportunities to contribute to society.

The CCTI project took the career pathways concept to a new level. The project created a model career pathway template, based on the best practices of educational institutions around the country and focused on the lead role of the community college. All CCTI partnerships developed at least one formal career pathway model based on the template, and many developed more. A number of CCTI sites, such as the three described here, have been instrumental in broadening the awareness and use of these pathways well beyond the project’s boundaries.

CREATING STATEWIDE TEACHER PREPARATION PATHWAYS FROM HIGH SCHOOL THROUGH UNIVERSITY

Maricopa Community College District, Arizona

Cheri St. Arnauld

Project Overview. At the national level, the expectations for teacher education are rapidly changing. Both state and national leaders are calling for higher standards and more accountability amid a critical teacher shortage. Arizona is no exception to the challenges facing the nation. Teacher shortages in Arizona exist in rural, urban, and exurban areas, especially in special education, mathematics, and science. CCTI was a catalyst for Arizona to create a new statewide model career pathway. It built on an existing career and technical education program for future teachers in the high school and linked opportunities and support systems for students to transition smoothly into a statewide community college Associate of Arts degree for teachers that transfers as a block to all public universities in the state. Further, the development of this CCTI career pathway has led to important policy discussions regarding access, the development of a pipeline for future teachers, and curriculum alignment that strengthens both the preparation of future teachers and their persistence through degree completion.

Developing the CCTI Pathway. As a first step to developing the statewide Teacher Education Career Pathway Model, the National Center for Teacher Education (NCTE), based at the Maricopa Community Colleges, developed a partnership with the Arizona Department of Education’s Career and Technical Education program called Education Professions. This program offers a high school curriculum for students who have an interest in pursuing a career in education. The curriculum provides instruction in education structure, systems theory, pedagogy, developmental stages, learning styles, and career choices.

Next, NCTE worked with community college districts throughout Arizona to identify the education

courses within the statewide Associate of Arts in Elementary Education degree (AAEE) program that were appropriate for dual-enrollment articulation. The AAEE courses are articulated through community college dual-enrollment agreements with secondary and postsecondary entities on a county-by-county basis. The AAEE is articulated for transfer with all of Arizona’s public university B.A. in Elementary Education degree programs. Many of Arizona’s private universities have also entered into AAEE articulation agreements.

Features of the Pathway. High school students enrolled in the CCTI program are assessed for college course placement in grades 11 and 12. Using the information from these assessments, each student works with faculty and advisors to develop an individualized college and career plan, including academic remediation if necessary. The plan maps out a course of study for students using institutional check sheets to build a high school to college to university plan that includes financial aid and scholarship opportunities. Since 2004, 333 high school students have participated in early assessment.

The six high schools currently in the CCTI partnership served 587 students from 2003 to 2006. These students include 26 percent ethnic minorities, 25 percent males, and 75 percent females. From 2003 to 2005, 189 Education Professions high school students participated in dual-enrollment options with the Maricopa Community Colleges. Seventy-five percent of CCTI high school students who enroll in the Maricopa Community Colleges have taken at least one community college course, and many have taken more.

The CCTI partnership model supports Education Professions Future Teacher Clubs through student conferences that provide information about careers, higher education opportunities, and skill development. The partnership also facilitates communication between high school teachers and community college faculty through joint meetings. Further, the project has supported the coordination of annual professional conferences for preservice teachers. Last year,

over 600 future teachers participated in the two sponsored conferences for high school and community college students.

Education Profession teachers and community college partner faculty are trained in the use of electronic portfolios with their students. These e-portfolios allow students to develop and update their career pathway plans, and they allow secondary and postsecondary faculty to create sequential standards-based lessons and units that include assessment rubrics. The goal of this effort is to develop a continuum of e-portfolios through high schools, community colleges, and universities, thus allowing for the progressive growth and assessment of students' knowledge and skills. In 2006, 185 community college students and 20 faculty were using e-portfolios, along with 244 high school students and 17 high school Education Profession teachers.

Campus tours can help high school students understand that attending college can be a realistic option. In April 2006, 60 high school Education Profession students and five teachers were hosted by Estrella Mountain Community College (EMCC) for the day. The students were able to participate in a hybrid classroom, visit with faculty and student support personnel, and tour the campus. Through a follow-up survey, 85 percent of the students indicated they would strongly consider attending EMCC. EMCC education faculty and staff have also visited all the high school partners to provide information about the community college teacher education program. High school teachers and college faculty communicate frequently and know each other on a first-name basis.

System Change in Arizona. The framework exists for the program to continue to expand around the state. More than 120 Arizona high schools participate in the Education Professions program, and all the state's community colleges offer the AAEE degree for future teachers. In the fall of 2006, over 80 participants met in a statewide summit to learn about implementing the systems that connect educational institutions, ease student transitions, and build student persistence for a robust teacher education pipeline.

Career pathways create a strong, viable option for building dynamic career options for students. Maricopa Community Colleges are using the CCTI pathways model to link high school, college, and university programs into a seamless system with fewer barriers to student success.

THE ST. LOUIS REGIONAL ENGINEERING ACADEMY: BUILDING A REGIONAL PATHWAY TO COLLEGE AND CAREERS

St. Louis Community College, Missouri

Ashok Agrawal

Program Overview. As a part of CCTI, St. Louis Community College (STLCC) is working with St. Louis area schools and

businesses to enhance engineering and technology curriculum in high schools. The college established an industry group, St. Louis Regional Engineering Academy (SLREA), to provide schools with industry support and involvement. SLREA is a regional partnership of business and industry, area high schools, STLCC, and other area colleges and universities, and is designed to enhance and expand technical education in high schools, encourage students to explore engineering and technical career fields, and help students pursue the prerequisites for college engineering programs. To accomplish these goals, SLREA has supported the introduction of the Project Lead The Way (PLTW) curriculum in St. Louis area high schools.

Reaching the Target Student Population. Implementation of the PLTW curriculum in the St. Louis area schools began in 2002 when Riverview Gardens offered the program to 10 students. In just four years, the program grew to include 20 high schools and more than 1,100 students. The schools have been enthusiastic about student response to PLTW curriculum and materials, and have attributed high levels of student motivation to participation in small group work, hands-on learning approaches, and the use of projects. The rigorous program is also seen to be helping traditionally underserved students to think in terms of going to college.

Community Partners. SLREA works in partnership with the St. Louis Industry Council, a group of corporations and industry leaders, such as Boeing, GKN Aerospace, Tyco-Mallinckrodt, and Ameren UE, interested in developing the trained workforce and engineering talent necessary to move their businesses forward. Specifically through its partnership with SLREA, the St. Louis Industry Council provides industry mentors to PLTW schools through a coordinated program; assistance in review and delivery of curriculum; opportunities for field trips, internships, and summer jobs; ongoing evaluation and recommendations for the future direction of the Academy; promotion of the program to school superintendents, teachers, and counselors; and third-party advocacy for the program in the community, particularly to parents and media.

Building a Regional Pathway. The CCTI project has created a career pathway built on the PLTW secondary school curriculum that leads into STLCC's Mechanical Engineering Technology program and then into bachelor's degree programs at several universities including Southeast Missouri State University and the University of Missouri-Rolla. PLTW structures a sequence of five pre-engineering courses that are taken in high school and also requires four years of college-prep math. Using this as a foundation, a 4+2+2 sequence was developed that spans high school and college, leading to degrees in engineering and industrial technology.

Program Results Highlights. SLREA creates a classroom environment that results in high school graduates who are prepared for challenging college engineering courses and who successfully enter the workforce, use technology in problem solving, understand and apply the scientific process, understand technological systems, use mathematics in problem solving, communicate effectively, and work in teams.

The success of the SLREA lies in its ability to unite business and education under an economic development umbrella. It is helping develop a technical workforce to keep St. Louis competitive, building a regional approach to recruiting new and retaining existing STEM industry companies to the area, providing better opportunities to students, and creating a regional pathway in engineering that can serve as a model for the development of pathways in other career areas.

**THE SAN DIEGO AND IMPERIAL COUNTY
(REGION X) REGIONAL ARTICULATION PROJECT**
San Diego Community College, California
Lynne Ornelas and Mara Palma-Sanft

Program Overview. The San Diego Community College District (SDCCD) was funded by the League for Innovation's CCTI to develop a high-school-to-college pathway in the law, public safety, and security occupational area. The faculty and staff at Miramar College have had a long, distinguished history as a regional leader in public safety training and have developed strong partnerships with local industry. Based at Miramar College, the project has offered early college assessment, new remediation strategies, and curriculum development support to ensure that high school students are better prepared for the college transition. College activities have been infused into the high school experience and include opportunities to participate in public safety career awareness activities for multicultural students and parents; Tech Prep articulated courses; and an accelerated, summer college course at Miramar College in administration of justice for high school juniors.

Regional Accreditation. Based on this foundation, the San Diego and Imperial County (SDIC) Region X Community Colleges were awarded a collaboration grant to develop a model for regional articulation that will be disseminated statewide. The SDIC region is comprised of nine community colleges, including SDCCD. Through CCTI and this new project, the SDIC region community colleges will continue to enhance and extend their partnership activities to better serve students in transition from high school to college.

SDCCD has been a leader in the region with its articulation model and extensive work based on CCTI goals and structure. When approached to participate in the collaboration project, SDCCD presented to the project

partners the concept and use of the CCTI framework to shape this model for regional articulation. The model has been embraced by the project partners and the CCTI template will be the basis for a common process for developing regional programs of study and high school/college articulation agreements.

As a proven model, the CCTI template will save the SDIC Region X community colleges duplicative time and effort, allowing the colleges to collaborate in designing one model program of study for each primary industry sector. The outcome of the group's work will be an aligned curriculum leading to credits that will be accepted at any of the nine local community colleges. All nine colleges are committed to meeting these goals.

The following are the major activities and concepts of the project: (a) create a common template for developing a course of study in six industry clusters based on the existing CCTI model; (b) develop a collaborative working group of educators, employers, and regional economic development staff, as well as the local Workforce Investment Boards to successfully develop the template; (c) with participation from college and high school staff, develop a course of study in each of the industry clusters to be targeted by each college and its consortia; and (d) strengthen and deepen the collaboration between secondary and postsecondary programs throughout the region in order to address industry needs and effectively prepare students for additional education and employment in the field.

IMPROVED ACADEMIC INSTRUCTION

Nationally, educators have been concerned with making sure that high school students in both academic and career-technical majors are engaged in rigorous academic coursework. As secondary career-technical education increasingly leads to postsecondary education and challenging careers, there has been a growing awareness of the need to ensure that all students are well prepared in math, English, and other academic areas. National research indicates that the most important predictor of college success is the completion of a set of rigorous high school courses, including four years of English and math (Adelman, 2006). Another study has found that the knowledge and skills required in the workplace are the same as those needed for college (Achieve, Inc., 2004).

In alignment with these findings, one of the five CCTI objectives calls for improving academic and skill achievement at the secondary and postsecondary levels. CCTI colleges and high schools are using a variety of approaches to increase the rigor of the academic curriculum offered to CTE students, especially in math, reading, and writing. In many cases, such as the two that follow, large numbers of students benefit in addition to those who are enrolled in CCTI pathways.

IMPROVING HIGH SCHOOL MATH INSTRUCTION THROUGH PARTNERSHIPS

Sinclair Community College, Ohio
Margaret Draeger

Program Overview. The regional Miami Valley Tech Prep Consortium (MVTPC) was formed in 1992 at Sinclair Community College (SCC) in Dayton, Ohio, as a partnership between secondary and postsecondary education and local businesses. Like other Tech Prep initiatives, it is designed to create educational pathways between high schools and community colleges in emerging career areas. MVTPC is the largest Tech Prep consortium in Ohio and one of the largest in the nation. Ten high-tech, high-wage career pathways are offered at 29 secondary school program sites, enrolling more than 2,400 high school juniors and seniors. In addition, more than 700 students have completed the secondary portion of the pathway and are currently enrolled in associate degree programs at Sinclair Community College; other students are pursuing bachelor's degrees at various other institutions.

The CCTI project at Sinclair Community College builds on this historically dynamic and well-developed Tech Prep program, with a particularly strong engineering technologies pathway. While the CCTI partners began with a focus on the mechanical engineering pathway, they have since created 63 career pathways. These are designed to permit students to progress from high school into college using a sequenced plan that culminates in a degree leading to profitable employment. In 5 of the 60 schools that participate in the Miami Valley Tech Prep Consortium (MVTPC), additional dimensions associated with the national CCTI have been strategically incorporated.

Project leadership uses this group of schools as research and development sites for the consortium as a whole. Because of its track record, the direction of Sinclair College and the MVTPC are closely followed by those in state government and other leaders in career and technical education around the state and nation. Thus, the CCTI project has become a true testing ground leading to the enhancement of career and technical education pathways statewide and beyond.

Improving Math Instruction. In 2002, to address an increasing emphasis on academic rigor and applied academics in CTE pathways, the MVTPC established a Contextual Integrated Academic Leadership Team for a number of the career pathways. The teams were made up of instructors from the various secondary program sites, including a technical teacher, an English or language arts teacher, a math teacher, a science teacher, and when possible, a guidance counselor. A series of professional development workshops was conducted for each team across a two-year period with the intention that those team members would serve as trainers for broadening the focus on rigorous, integrated curricula at all program sites.

By 2004, the approach to integrating curriculum had changed somewhat. At that time, there was a need for a greater focus on the academic areas of emphasis in each pathway. Because of the significance of math to the engineering technology pathway, a math instructional leadership team was formed at two of the CCTI high school sites, Stebbins and Fairmont, to provide specific professional development and interaction between high school and college faculty and staff. The math leadership team goal was to eliminate the need for remedial math on college enrollment and to improve student readiness for college math course work.

To accomplish this goal, college and high school faculty met at each school to develop strategies for helping students attain the knowledge and skills needed to pass the college placement test and succeed in college math classes. Both math and career-technical education teachers were involved. College faculty members provided information on the foundational knowledge and skills needed for success in college math. Then college and high school faculty worked together to create a set of strategies, targeted primarily to high school juniors. These included additional off-the-clock planning time for high school teachers, better alignment of the high school and college curriculum, and additional testing for students to determine where they needed to fill in gaps in knowledge.

Expanding the Effort. The CCTI project is now working to replicate this approach across all five of the CCTI schools. Each school has created a math team and is collecting baseline data on students. The goal is to graduate the upcoming CCTI class with no college math remediation needed. A related goal is to have all students in the program take four years of high school math so they enter college more fully prepared for next steps. A similar team development process will be initiated for English and language arts instructors. This model of academic leadership teams in each career pathway will be replicated across all pathways in the consortium.

INVOLVING HIGH SCHOOL AND COLLEGE FACULTY IN IMPROVING HIGHER LEVEL READING SKILLS

Lehigh Carbon Community College, Pennsylvania

David L. Fallinger

Project Overview. Lehigh Carbon Community College (LCCC) has been a partner with the Lehigh County K-12 School Districts and the Lehigh Career and Technical Institute through a Career Pathways Initiative that began in 1998. The Lehigh County Career Pathways project provided the natural foundation for LCCC's CCTI project, which has focused on developing a career pathway in nanofabrication manufacturing technology and on introducing the Reading Apprenticeship (RA) curriculum into the local education systems. While small numbers of students take advantage of the opportunity to travel the full career pathway, hundreds of local high school students are benefiting from the RA program.

The most significant force behind this initiative is the commitment from the educational and business leaders in the region to work together for the enhancement of educational opportunity for students. The Career Pathways Initiative provides for countywide committees that focus on common curriculum development, staff development, student assessment, career counseling, and marketing. In addition, a steering committee meets every other month.

A Focus on Reading. The Reading Apprenticeship program is "an approach to reading instruction that helps young people develop the knowledge, strategies, and dispositions they need to become more powerful readers" (SLI 2007). It was brought to the Lehigh Carbon area in response to a request from the local superintendents' council for a new approach to reading instruction; the council had become concerned about reading ability and comprehension among high school students. A group of education leaders undertook research on varied alternatives and decided that the Reading Apprenticeship program, developed by WestEd, appeared both effective and respectful of the knowledge and professionalism of classroom teachers. The CCTI grant proposal was originally written to support the dissemination of this model.

The Reading Apprenticeship program is designed to provide teachers with a framework to understand and implement strategies that help students comprehend reading materials in the context of any course. It is considered appropriate for use in teaching middle school, high school, or college students. Training of teachers in the use of these methods began in 2002 and the numbers trained have increased each subsequent year. By fall 2006, over 200 teachers had been trained and about 40 were certified trainers. However, since individual school districts have taken over many of the training functions related to this program, it is difficult to track just how many teachers and students are now involved.

Implementation of Reading Apprenticeship. To get started, LCCC collaborated with its partners to facilitate the training of teachers through the WestEd Reading Apprenticeship Training Project. Those trained then provided local training of teachers from partnering districts. The RA project continues to be embraced by more districts and it is exciting to see further expansion as many school districts complete this training with all employees. A Lehigh Career and Technical Institute math teacher responsible for training the technical staff at her school received statewide recognition for training initiatives in Reading Apprenticeship.

As a result of our CCTI project with RA and work through our local career pathways organization, Pennsylvania has adopted many of the reform strategies used by career pathways, including Reading Apprenticeship, as a part of its statewide reform Project 720 (Pennsylvania Department of Education, 2001).

Looking Ahead. The CCTI project is currently exploring ways to update the initial RA strategies sponsored through WestEd. Our focus is on continued exploration of alternatives to expand the impact of reading literacy training for our schools and teachers as a means of enhancing student achievement. These strategies, in coordination with the career pathways strategies, serve to enhance the focus of advancing career education for schools and students, both locally and across our commonwealth.

IMPROVED CTE INSTRUCTION

The field of career-technical education (CTE) continues to develop better curricula and instructional practices, ensuring that students remain engaged and learn the hands-on aspects of their career areas. Crawford (2001) talks about ways that student motivation and achievement can be enhanced by incorporating such strategies as helping students to relate curriculum to their own experiences, applying core concepts, learning cooperatively, and transferring knowledge to new situations. Other important practices include the use of integrated curriculum, the incorporation of more sophisticated workplace learning experiences, the integration of technologies such as online learning, and the implementation of project-based learning.

Many of the CCTI partnerships have employed these strategies and others. Some have brought in experts on contextual education to train faculty members; others have developed interesting summer internships. In almost all cases, including the two described here, these opportunities have influenced the lives of many students in addition to those officially enrolled as CCTI students.

STRATEGIES FOR SUCCESSFUL STUDENT ENGAGEMENT IN THE TEACHER EDUCATION EXPLORATION (TEE) PROGRAM

Lorain County Community College, Ohio

Karen Wells and Tammy Macek, with Helen Dronsfield and Gylene Pelton, Lorain County Joint Vocational School

Program Overview. The Lorain County Joint Vocational School (LCJVS) and Lorain County Community College (LCCC) have created a career pathway in which future teachers participate in the Teacher Education Exploration (TEE) Program before progressing into teacher education programs at the college. TEE has implemented two primary strategies for successful student engagement: internships and online learning. As a result of the use of these strategies, the TEE program's instructors observe enhanced student engagement among their high school seniors every day. Students are actively involved in learning; they interact frequently with their teachers; they exert extra effort to complete their schoolwork; and they rise to the challenge of college-level academic work. On completion of the program, TEE students show an increased sense of independence and responsibility. They are more reflective and insightful about their internship experiences.

More than 115 high school seniors enroll in the TEE Program each year, which provides students with 300 hours of internship experience in K-8 classrooms in their home school districts and more than 150 hours of academic instruction at Lorain County Community College and online through the LCJVS TEE website. Each TEE student serves in five classroom internships for six weeks each, for at least eight hours per week. Each student experiences an early elementary, an upper elementary, a middle school, and a special education classroom. In addition, two placements are the student's choice. In each internship, students work with a cooperating teacher for six weeks to observe, assist, evaluate, and occasionally teach students. At the conclusion of each placement, students reflect on their experience online and eventually compile these reflections in an electronic portfolio. These narrative reflections have contributed to significant improvements on college placement test (COMPASS) scores in writing and represent a useful strategy for reducing remediation.

About the Internship. Through the TEE internship, students learn to interact with their TEE instructors and cooperating teachers more effectively and frequently. The TEE instructors, cooperating teachers, and TEE students develop a three-pronged relationship. The TEE instructor serves as a coach and mentor to the students and communicates frequently with the cooperating teachers. The cooperating teachers, who are a vital part of the experience, enjoy sharing their experiences and their skills, and they often mentor the TEE students. The TEE students, in turn, ask more effective, directed questions and share what they are learning about technology and teaching.

According to Helen Dronsfield, TEE instructor, students learn to think like teachers, and they become aware of how their behavior affects the young students who look up to them. The students become more confident and comfortable with adult conversation, which polishes their communication skills.

This student-teacher interaction also helps students develop a more realistic view of classroom teaching. According to veteran TEE instructor Gylene Pelton, students quickly learn that teaching is much different than they had imagined: "Most students think that teachers just come into the classroom and start teaching. They have no idea how much preparation is involved in teaching and creating a learning environment in the classroom." As a result, some students develop a love of education and a desire to teach; others decide they do not want to teach. Both scenarios are of value.

Due to the selective nature of the program, more than 95 percent of these students are on an academic track toward college, and many are honors students at their home high schools. However, these students also love the hands-on learning. According to Pelton, "It is a rare treat for the students to have this opportunity for experiential learning." She emphasizes that students can immediately apply theory to practice. In the early stages of most college teacher education programs, this is not the case.

Online Learning. Another result of their level of engagement is that TEE students tend to exert extra effort to meet the challenge of college-level academic work in the online learning environment. Most students spend at least two hours per week

online at the LCJVS TEE website. The online environment allows students to reflect more deeply and apply their theoretical learning to their field experiences. According to Dronsfield, this online learning also prepares students to take online courses in college.

Using the TEE website, students are required to participate in weekly discussion forums, submit assignments, and review instructional materials. Students can email the instructor to clarify assignments and they can email other students. Students save their weekly assignments and compile them at the end of the year in an electronic portfolio they produce in PowerPoint. According to Dronsfield, "I tell students that we only give them assignments that are meaningful and help them prepare for what it means to go to college and pursue a career in teaching." Some of the assignments include writing their autobiography and philosophy of education, developing their résumé, and reflecting on their learning styles.

MAKING SUMMER COUNT WITH HANDS-ON LEARNING IN A HOSPITAL SETTING

Miami Dade College, Florida

Jackeline Estay

Program Overview. Students interested in entering the health professions need the opportunity to experience for themselves what it means to care for patients. The CCTI program at Miami Dade College offers high school students a chance to find out while making good use of their summer. Through its partnership with the CCTI project, Miami's Baptist Hospital has committed to offer a six-week summer internship for students from Felix Varela Senior High School through the Department of Volunteer Services. This internship is designed to provide high school students with their first hands-on learning experience and give them exposure to multiple health careers. Through this internship, students acquire the education and skills necessary to succeed in any health profession by observing and assisting health-care professionals in their daily work. Students are assigned to different departments including pediatrics, labor and delivery, orthopedic, endoscopy, operating, and emergency room.

About the Internship. The objectives of the CCTI internship are (a) to expose students to a professional setting in order to motivate them to continue their education and become professionals; (b) to provide the opportunity to relate and apply classroom theories and techniques to real-life situations; (c) to gain the skills and knowledge for professional growth; and (d) to help students with the process of making the right career choice. To be considered for the CCTI six-week summer internship at Baptist Hospital, students at Felix Varela High School must be at junior level at the time of the internship; participate for 10 hours per week during a period of six weeks; be in the Health Academy or plan to pursue a nursing or allied health career; be eligible to participate in dual enrollment

classes; complete an application packet signed by their parents or guardian; and write an essay expressing interest in the CCTI six-week summer internship.

Prior to the internship at Baptist Hospital, students are required to attend general orientation and patient unit training. During the general orientation, students learn how to provide good customer service to patients, guests, co-workers, physicians, and others. They learn about safety standards, infection control, confidentiality, ethics standards, and team work. During the training, students learn how to assist the nursing personnel and staff in the care of patients and in maintaining the orderliness of the unit and patient rooms.

Mentoring and Guidance. During this summer internship, students are required to write a journal sharing their daily experiences and observations. Each student is assigned a mentor, typically the department manager, who evaluates the intern on intellectual ability, communication skills, emotional maturity, adaptability, team skills, dependability, conflict resolution, awareness of limitations, and reaction to criticism. The CCTI project coordinator schedules weekly meetings with the interns focusing on students' progress and concerns regarding the program and on ensuring that students follow hospital guidelines.

Near the end of the internship, students have the opportunity to evaluate the program based on their experiences and observations, and they are asked to provide suggestions for internship improvement. On the evaluation sheets, interns can express their interest in becoming part of the ongoing volunteer team at Baptist Hospital to gain experience in other areas beyond those included in the internship. Students also receive a certificate of completion and 60 hours of school credit for community service.

Benefits of the Experience. During the internship students learn about new topics and share a range of personal and educational experiences. Topics include communication and team work; ethics and confidentiality; the role of social workers in comforting the patient; the value of the work doctors and nurses do; the importance of understanding patients' needs and comfort; strategies for becoming self-sufficient and responsible; the use of hospital equipment; and strategies for becoming a caring, compassionate health-care professional.

CCTI students who participate in the summer internship have expressed that they are more interested in nursing as a career, have gained greater understanding of medical procedures, and have reduced their fear of working in a hospital environment. Many interns consider their internship experience to be the opportunity of a lifetime, one that enables them to succeed in school and on their career pathways. They also feel that the internship has helped them acquire needed skills and knowledge as they enter higher education and the workforce.

PREPARATION FOR COLLEGE-LEVEL WORK

The CCTI project is designed to smooth the transition from high school to college in multiple ways, but has especially focused on making sure students are truly ready for college when they enter. In fact, one of the five CCTI objectives calls for preparing high school students to enter college without the need for remediation. The need to participate in remedial or developmental coursework has many disadvantages for students, colleges, and society. Research indicates that enrollment in remedial coursework is a leading predictor of dropping out of college. In addition, having to study high school level material again in college means students take additional courses that don't bear high school or college credit. As a result, students, their families, and taxpayers end up paying more for students to attain a college credential (Alliance for Excellent Education, 2006).

CCTI partnerships are working to help students enter college ready to engage in college-level work in math, English, and reading. Many participating colleges offer opportunities for high school students to take college placement tests to help them identify areas to strengthen before going on to college. A number of them also offer opportunities for students to improve their reading, writing, math, and English language skills. Still others create opportunities for students to learn about how to navigate college admissions and other systems that will increase their chances for success. Two examples follow.

FOX VALLEY TECHNICAL COLLEGE MEETS REMEDIATION NEEDS WITH GOAL-TO-GO

Fox Valley Technical College, Wisconsin

Mary Hansen

Program Overview. Today we live in a world of consumer convenience. We can check email or watch a movie from our cell phone, educate ourselves at home via computer, and find almost any sort of food via the drive-through lane. This consumer approach was the basis for an idea that turned into the GOAL-to-Go program at Fox Valley Technical College (FVTC). FVTC began the program with a group of high school students who would be the first cohort in the CCTI project. The college, already a member of a regional distance education network, K-12 Schools/College Alliance for Distance Education, served a great number of high school students by offering college courses via interactive television. The high school students' overwhelming interest in criminal justice courses and strong support from the college's Criminal Justice Center for Excellence led to a law enforcement and public safety focus for the college's CCTI project.

As FVTC began working with the cohort students, the CCTI implementation plan began to unfold and two elements appeared to be essential for student success: early assessment of skills and remediation options. All high school cohort students participated in Accuplacer assessment, enabling the college to compare their basic skill levels to the college's criminal justice program entry requirements. Although many students were adequately prepared for program entry, many other students needed a refresher in math, English, or reading.

Helping Students Improve Their Skills. The college's in-house remediation program, Goal-Oriented Adult Learning (GOAL), provided the basis for a convenient, effective remediation option for high school students who needed extra help and who were spread geographically across the FVTC district. The GOAL staff, along with the FVTC CCTI team, developed a plan to offer three eight-hour courses in

math, English, and reading, at a variety of the high school sites. Supported by CCTI, the college purchased eight laptop computers that would eventually be loaded with software for all three classes, thereby creating a traveling GOAL lab, GOAL-to-Go.

In fall 2003, GOAL-to-Go kicked off with meager success. The instructor who would be working with the students developed a schedule and asked all high schools involved in CCTI to spread the word about this great service that was completely free to the school districts. A schedule of site visits began to take shape, but the 3:30-5:30 p.m. timeframe, seemingly convenient for high school students, conflicted with team practices, part-time jobs, and other commitments. Through the 2004-2005 school year, GOAL-to-Go served only 17 students.

Seeking to Serve More Students. By fall 2005, the GOAL-to-Go format was revamped in several ways. As an alternative to scheduling time at high school sites, the instructor began to work with the FVTC regional center locations to schedule time at the centers. Student feedback indicated that, not only was the original 3:30 p.m. timeframe bad for many students, there seemed to be the stigma of "staying after school" for "help" that was associated with the program in the previous year. By moving to what the students saw as a college location, more began to seek out the service, even with the new timeframe of 5:00-7:00 p.m., twice a week, for two weeks. As a collateral effect, adult students who had heard about the GOAL-to-Go option were requesting to register in the classes as well.

For nearly two years FVTC has attempted to serve students in need of remediation through the CCTI project. Struggling to find the right combination of a schedule that works for students while covering the required content has been the biggest challenge. Recently, success with a summer session has proven the best combination to date. In July 2006, a longer meeting time—2 hours and 45 minutes—on three days a week for a three-week period seemed appealing to high school and adult students alike. The summer session served 31

students, and based on instructor feedback, received the most positive response from those who participated.

Initially, the goal of this project was to reduce remediation for the high school students involved in CCTI. Not only have we seen those students who retook Accuplacer do better and have more confidence in their basic skills, but FVTC has also helped adult students prepare for further education and individual career paths. Over 20 years ago, FVTC took on the task of providing remediation to students at different skill levels, preparing them for whatever their next academic challenge might be. Today, GOAL-to-Go continues to expand on that mission as we work to make it a part of the sustainability plan for CCTI.

GAINING ENTRY TO THE HEALTH PROFESSIONS: PARTNERING TO IMPROVE STUDENTS' READING, ENGLISH, AND MATH

Northern Virginia Community College, Virginia
Charles Whitehead

Program Overview. CCTI has partnered with the Medical Education Campus (MEC) of Northern Virginia Community College (NOVA) to provide a smooth transition for students enrolled in high school health and medical sciences career and technical education (CTE) programs to associate degree health career programs offered at the MEC. The MEC is a collaboration of Northern Virginia Community College; George Mason, Virginia Commonwealth, and Old Dominion Universities; and regional secondary schools. It is the first stand-alone industry-focused health-care education service facility in Virginia. The MEC offers associate degree and certificate programs for a wide range of students in dental hygiene, emergency medical services technology, health information technology, medical laboratory technology, nursing, physical therapist assistant, radiography-diagnostic imaging, respiratory therapist, and others.

The MEC identified three schools in the Fairfax County Public School (FCPS) system that provide health science CTE programs to participate in the CCTI project: Falls Church High School, Chantilly Academy, and West Potomac Academy. Combined, the three schools instruct nearly 500 students each year in health and medical sciences CTE programs that include practical nursing, emergency medical technologies, physical and occupational therapy, dental assisting, and medical health technologies.

Entering College Without the Need for Remediation. To help ensure smooth pathways for students, NOVA decided to pilot a process providing high school students with the opportunity to take a college placement test while still in high school. This would enable them to strengthen any areas needing work before beginning college. NOVA's president and the provost of the MEC approved the piloting of placement

testing for high school students and, in collaboration with the MEC Testing Center and CCTI, the project established testing protocols. Students participating in the CCTI pathways were encouraged to take the E-Compass, a computer-based placement test, at the MEC Testing Center. Following testing, students were invited to have their tests analyzed and to receive counseling in the student services department.

Extra Help for Students. Students identified as needing assistance to become college ready in English, math, or reading have two options. One is to request additional help from the high schools, some of which offer after-school remedial programs. The other is to participate in NVCC's Healthcare Careers Summer Bridge Program. According to the NVCC (2006) website, "The [HCSBP] program is designed to help students develop critical thinking, problem solving skills, math, and reading skills while introducing them to potential careers in nursing and allied health. The five weeks is the initial entry into a year-long program. HCSBP students also receive ongoing academic and advising support throughout their freshman year." The program was designed to serve 25 high school students during the summer of 2006.

The Impact on College Systems. NOVA is now actively participating in early college placement testing for high school students wishing to take dual enrollment and concurrent enrollment classes at NOVA. CCTI has challenged the college norms by introducing early college placement testing to students who do not first have to enroll in the college. NOVA, actively involved with high school outreach, has embraced this concept and has taken it to appropriate committees, which will be involved in approving the testing and establishing testing guidelines to ensure students do not abuse testing opportunities.

In addition to changing testing procedures, CCTI has petitioned the college to expand the Early College Placement Testing pilot from the MEC to the six NOVA campuses that serve all of northern Virginia. To explore and develop this expansion, testing centers on all campuses have met to establish a system to differentiate CCTI students from other NOVA students and a collegewide database to maintain student data and provide the ability to merge student data into the college database system.

These efforts and others will foster smoother transitions for high school students into Health and Medical Sciences programs at the MEC. There continue to be concerns about adequate numbers of skilled health-care workers in northern Virginia and the nation, but with programs such as CCTI the future is a bit brighter.

HIGH SCHOOL-COLLEGE PARTNERSHIPS

Nationally, there is much talk about the importance of high school-college partnerships in improving student access to college. Sometimes located within P-16 initiatives, these partnerships are generally designed to improve ways that the secondary and postsecondary systems work together. Of primary importance is the need to align curriculum, assessment, and institutional structures so students are able to make a smooth, successful transition from high school to college. Recent conversations among education leaders note that there continue to be many problems with this transition point, and that P-16 initiatives are often unevenly implemented (Pathways to College Network, 2007).

In CCTI, many high schools and colleges have entered into genuine collaborative efforts that go beyond occasional meetings of P-16 councils. Together they are creating curricula, working on systems alignment, sharing facilities, and engaging in joint professional development. The establishment of these closer relationships, as illustrated in the two examples here, lays the groundwork for expanded cooperation across systems.

ALIGNED EDUCATION SYSTEMS AS THE KEY TO SMOOTH TRANSITIONS

Anne Arundel Community College, Maryland

Andrew Meyer and Kathleen Beauman

Program Overview. Anne Arundel Community College (AACC) is a public, two-year, open-admission, multicampus institution that offers high-quality, comprehensive learning opportunities, community outreach, and services responsive to the needs of the residents of Anne Arundel County. One of 16 public two-year colleges in Maryland, AACC is the third largest, in terms of credit enrollment, of Maryland's community colleges. AACC serves its students at its main campus in Arnold as well as at the Glen Burnie Town Center, AACC at Arundel Mills, and a variety of county middle and high schools. The AACC University Consortium, a partnership with four-year colleges and universities, provides learners the opportunity to earn baccalaureate and graduate degrees and certificates without leaving the county.

The Anne Arundel County public school system is the fifth largest in Maryland and among the 50 largest school systems in the country. With a staff of more than 5,000 teachers, the Anne Arundel County Public Schools (AACPS) educate a culturally and economically diverse population of nearly 75,000 students. Arundel County Public Schools offer a comprehensive, systemwide curriculum from kindergarten through 12th grade.

In the early 1990s, AACC and AACPS partnered to develop and implement a Tech Prep program of studies. A Tech Prep Local Labor Market Team, comprised of secondary and college staff and leadership, was established as the convener of educational partnerships. A leadership team, led by the college president and school superintendent and consisting of AACC and AACPS leaders, met on a regular basis to discuss issues of mutual concern including student transition, instructional and student services partnerships, and collaboration around program development.

AACC's involvement in CCTI provided the opportunity to explore and implement a variety of strategies to facilitate successful student transition from high school to college. The CCTI project was built on the Tech Prep instructional partnerships, and as of 2006, over 20 articulated program pathways had been created in a variety of career and technical areas. College staff also created strong relationships with high school guidance counselors, principals, and teachers.

Teacher education and training has been the primary

focus of this CCTI project. To maximize both fiscal and personnel resources, AACC developed an institute model whereby all learning, credit, noncredit, and contract, is centralized under one leadership team. Credit enrollment in the AACC Teacher Education and Child Care (TEACH) Institute has grown from 426 students in fall 2003 to 698 students through summer 2006. The Associate of Arts in Teaching (AAT) degree programs have expanded from one in fiscal year 2004 to six AAT programs and nine certificates currently. To date, 94 students have graduated with an AAT degree from AACC.

Aligning Systems to Improve Transitions. To facilitate transition from high school to college, an instructional and student services work team was developed, representing both secondary and postsecondary faculty and staff. The Academy of Teaching Professions, a secondary education program pathway, was created that allows students to move seamlessly into the community college where several career options are available. For students seeking a baccalaureate degree, the Associate of Arts in Teaching is now fully transferable into any Maryland public or private college or university.

To reduce remediation and increase both student and parent understanding of higher education expectations, a variety of initiatives were undertaken. Accuplacer, a college assessment tool, is administered to students enrolled in the Academy of Teaching Professions program. Based on the outcome, course adjustments can be made to decrease the need for later remediation. Parent information sessions were created on the one-stop model where Academy students and their parents learn more about transition strategies including college expectations, course-taking patterns, program pathways, early assessment, and career opportunities in education and training.

One challenge in a large school system is ensuring that students have access to information relevant to higher education and transition. The college hired a part-time teacher liaison who is the primary link among the participating high schools and AACC. The teacher liaison reaches over 1,000 students annually through classroom presentations and participation in special events. In addition, in October 2005, a part-time transition advisor was brought on board to support the high school guidance personnel who maintain an average student case load of 350 students. The transition advisor, a retired high school guidance counselor, is housed at the participating high schools. In less than one year, the transition advisor has met individually with over 600 students to discuss career opportunities, program pathways, college preparation, and successful transition strategies.

In addition, the full-time position of instructional coordinator/adviser, reporting directly to the TEACH Institute director, was created to help students understand the many nuances related to teacher certification and entrance requirements at the baccalaureate level. The instructional coordinator/adviser provides specific program information in the area of teacher education, employment and growth disciplines, transfer information, and scholarship opportunities.

Professional development is conducted twice a year for AACPS Academy of Teaching Professions faculty members. Areas of focus include curriculum updates, early college admission programs, new AACC education degrees and certificates, and instructional strategies. In addition, joint professional development with high school and college faculty increases communication across the systems.

The T3 Project, a joint venture of AACC and AACPS, began in 1998 as a training model that melded two county institutions using the strengths and infrastructure of one to advance the professional development goals of the other. By using the college infrastructure, AACPS teachers and staff personnel have participated in quality training that allows them to integrate technology into instruction. To date, there have been 58,000 AACPS registrations representing over 50 percent of all county school personnel. A total of \$4,125,000 has been dedicated to the professional development needs of AACPS staff and faculty through the T3 Project.

The close relationship that has developed between the K-12 and postsecondary systems in Anne Arundel County, partly attributable to CCTI, has led to greater alignment between the systems, better student guidance and support, improved professional development opportunities, and an easier transition process for students.

HIGH SCHOOL AND COLLEGE FACULTY BRIDGE THE COMMUNICATIONS GAP WITH TALK TIME

Corning Community College, New York

Linda L. Miller

Program Overview. All they do is talk? Yes, that most basic of human activities—in this case, talking within disciplines and across grade levels—is generally nonexistent in today’s academic circles. Yet Corning Community College’s (CCC) CCTI project has provided opportunities for simple discourse, accompanied by active listening and feedback, that has become a vital tool in bridging the communications gap between high school and college faculty.

Talk Time grew out of a frustration with institutionalized lack of communication that effectively isolated secondary faculty from the realities of the college-level classroom—its curriculum, instruction techniques, technology, and links to the world of work—and in turn, blocked college faculty from providing feedback on student preparedness and performance to feeder high schools. To bridge the gap, Talk Time offers a turf-free, neutral site for a casual coffee-klatch approach where instructors of like disciplines can meet, socialize, discuss, share, and ultimately forge professional bonds and communication conduits for the greater good of their students.

Initial sessions in 2004 drew a smattering of participants but word-of-mouth eventually increased attendance. Benefits,

especially for veteran instructors with decades of experience, have helped spur interest in what today includes an area Curriculum Connection dinner meeting at the start of the school year and planning for an instructor-driven Tech Day.

One early participant, Jim Trumpfheller, Technology Teacher at Spencer-Van Etten High School, a CCTI partner, is completing his 25th year as an educator. Jim states that he joined Talk Time “to find out how the school can connect with the college and vice-versa...what the Spencer-Van Etten Technology Department can do to make it easy for our students to transition to CCC and other two- and four-year colleges. It allows me to put names and faces together [and] address our educational needs by allowing us to make sure we are teaching the proper information [and have the right] tools, etc., for a CCC student. It is an excellent way to discuss problems and success in our discipline.”

Chris Hand, Instructor of Computer Network Technology at Greater Southern Tier (GST) BOCES, also a CCTI partner school, is another veteran with 25 years of teaching experience. Her insights dovetail with Trumpfheller’s: “We often wonder what others are doing in our field... Talk Time opened direct lines of communication between CCC staff members and other high school instructors. Value comes from learning where the education focus is going and how it’s getting there. The college offers new courses periodically and we need to keep current on what is available for our graduating students. It helps our students by allowing us to prepare them properly for further education. Talk Time helps clarify what is needed to be successful at the college level.”

The Impact of Talk Time. Changes resulting from this initiative include expanding curriculum in GST BOCES Computer Network Technology for closer alignment to CCC’s and using Talk Time data as a bargaining tool to acquire additional equipment. Brad Cole, Associate Dean of Instruction, Math, Physics, Engineering Science, and Technology at CCC, brings 20 years in teaching and six in administration to the Talk Time experience: “My faculty and the high school faculty have become more and more comfortable with each other and more willing to share experiences, problems, and concerns in both directions. At the beginning, it seemed that both groups were interested in protecting their images and turfs. This attitude has disappeared with true meaningful discussions.” In some cases, he says, teachers thought they were teaching college-level material, “but after frank discussions with the college faculty, they realized that they had to modify some of their delivery. Talk Time also has enlightened the college faculty regarding the degree and level of material presented in the high schools.”

Talk Time has demonstrated that informal, ongoing back-and-forth discourse builds and strengthens collegial relationships between high school and college faculties; produces beneficial discussions on curriculum and techniques; provides secondary teachers with a better understanding of the material taught in college-level courses and the relationship between secondary material and college courses; helps college faculty understand the degree and level of material taught in the high schools; increases mutual respect among participants; bolsters the image of the community college; broadens and strengthens the high school curriculum; and eases student pathways from secondary schools to college.

EDUCATION-BUSINESS PARTNERSHIPS

The most effective career-technical education programs often grow where there is committed and focused involvement of the business community. In some cases, businesses are involved directly with institutions; in others, the business partners offer guidance or opportunities to individual students. Typically, partnerships involve one or more of the following: business support for classroom teaching and learning, help in the development of career-technical education programs, and provision of internships or apprenticeships (Lankard, 1995).

In most cases, CCTI projects have built on and strengthened existing business partnerships. In a few cases, new partnerships have emerged. In some locales, the business community essentially started the CCTI project; in other settings, business has followed the lead of the educators. Once again, the presence of CCTI has encouraged these relationships to develop in ways that foster expanded cooperation. As the two examples here demonstrate, a wide range of students benefit from these relationships.

TECHCONNECT CLUBS CONNECTING STUDENTS TO THE FUTURE

Central Piedmont Community College, North Carolina
Ron Williams

Program Overview. How do you attract students into a technology career track, especially those who may have had little contact with computers at home? We did it by making the career interesting and fun. Central Piedmont Community College (CPCC), in partnership with Charlotte-Mecklenburg Schools (CMS) uses TechConnect (www.techconnectcentral.com) as a part of its CCTI project to help students get excited about technology careers.

TechConnect is a weekly after-school technology and computer club for students in Charlotte-Mecklenburg high schools, sponsored by Advantage Carolina in cooperation with Information Technology Charlotte (ITC). Advantage Carolina's mission is to unite the efforts of public, private, and nonprofit organizations to address issues affecting North Carolina's Charlotte region. The ITC is a council formed by the Charlotte Chamber of Commerce to advise and assist the IT industry. Both also support the TechConnect for Teachers program, which allows teachers to participate in technology tracks for CEU credits. IT professionals from the local business community lead sessions for both students and teachers.

The primary purposes of the TechConnect program are to promote IT in the classroom by providing real-world technology training to both students and teachers within the CMS school district; ensure an adequate supply of IT skilled workers in Mecklenburg County; establish a model approach to channel corporate support for IT in our schools; provide an internship/mentoring program for high-potential IT students and eventually for teachers; establish linkages between high school IT students and local colleges and universities; establish a forum for high-potential IT students to access a wider variety of training, mentors, and courses; encourage IT students to stay in school and assist them in identifying and realizing their academic objectives; and attract students who may not have a current active interest in technology topics.

Implementing TechConnect. To accomplish its purpose, TechConnect has developed tracks of study for the student clubs that are formed at the local high schools. One major contributor to the clubs' success has been that the tracks are taught by business and industry volunteers. Each technology club meets once a week from 2:30 to 4:00 p.m. on school days, and high school students may participate. Initial student activities, or tracks, include computer hardware, upgrade and support, refurbishing, graphics and imaging, networking essentials, web development, Flash, and career development. Students participating in the tracks may build or refurbish computers to take home, design graphics they transfer to tee shirts to wear, or develop their own websites. The students are having fun and learning.

With the quickly changing nature of technology, the original tracks are constantly scrutinized and updated. The TechConnect committee is dedicated to adding additional tracks of study for students who wish to participate every year. As technologies change, new tracks are added. Some of the newer tracks include Designing Your Own Video Game, Robotics, 3D Design, and GIS. Additional activities such as field trips, recognition events, and graduations are planned for the clubs.

Faculty sponsors and assistants are designated by each high school and encourage students, provide the TechConnect program manager and coordinator with essential feedback on the program, and support the presenters. Because the success of the clubs depends greatly on the faculty sponsors, yearly stipends have been allocated for each faculty club sponsor and assistant for each high school. CPCC has actively participated with TechConnect, providing advisory board members, track developers, and track instructors. Some advanced college students have gained additional course credit by teaching tracks as in-service learning.

The Impact of TechConnect. TechConnect numbers tell the tale: Clubs have expanded from the initial two schools in January 2001 to 14 schools in September 2006, with some schools supporting more than one club. More than 3,850 students had participated in clubs through spring 2005, and over 225 internships have been completed. By June 2006,

at least 406 CPCC students were former TechConnect club members, accounting for more than 8,500 cumulative credit hours, translating into more than 488 full-time equivalencies, and generating over \$1,942,348 in funding. Local business and industry have contributed over \$4,144,000 to TechConnect in equipment, software, technical support, internships, and scholarships. This dollar amount does not include the time of the volunteers.

TechConnect is a proven after-school club that can make learning fun and relevant for high school students who may one day want further education and jobs in information technology. Without the participation of business partners, this could not have happened.

STRONG EDUCATION AND BUSINESS PARTNERSHIPS CREATE A RIPPLE EFFECT

Ivy Tech Community College, Indiana

Rosalie Hine

Program Overview. Columbus, Indiana, prides itself on collaborative partnerships, and that spirit of collaboration has formed the backdrop for many initiatives such as the CCTI project. The project focuses on health careers at Ivy Tech Community College—Columbus in cooperation with local school districts and health-care providers. The existence of the Community Education Coalition (CEC), a regional partnership of education, business, and community leaders created to bring leadership and resources together to improve the community's learning systems and respond to area workforce and economic needs, provided an opportunity for the CCTI project to become effective almost immediately after its inception.

Partners in the CCTI Health Careers Program included the three higher education entities in Columbus—Ivy Tech Community College, Indiana University Purdue University at Columbus, and Purdue University School of Technology—along with the local school districts—Bartholomew Consolidated School Corporation, Flatrock-Hawcreek School Corporation, and the Columbus Area Career Connection (C4)—the Columbus Regional Hospital, the Center for Teaching and Learning, and the Community Education Coalition. A 24-member CCTI advisory board was created, with representatives from each of these partners as well as representatives from the Chamber of Commerce and the local workforce development office.

Improving Health Occupations Education. During the first year of the project, the advisory team met frequently to assess regional workforce needs in health care, determine existing strengths and resources, and develop programs and strategies to fill identified needs. Now in the fourth year of the project, this group meets quarterly with a focus on continued discussion of needs and exploration of additional opportunities for collaboration. As a result of the combined

efforts of the partners, Columbus and the surrounding region have seen significant growth in the number of highly educated, skilled health-care workers to meet the region's demands. The outcomes resulting from partner collaboration have gone far beyond the scope originally envisioned by the project leadership. Each of the major partners has contributed significantly to the success of the program in both real dollars and in-kind services.

The project built on an existing shared program in dental assisting, offered cooperatively between C4 and Ivy Tech. This program, housed at the career center, serves both high school and adult students and leads to a technical certificate in dental assisting. The career center hires the faculty and covers the expenses of the program. The college reimburses a portion of those expenses based on adult student enrollments. A second shared program was created under the auspices of CCTI leading to certification as a central services technician (CST) and using the same model. As part of the education and community partnership, the Columbus Regional Hospital provides instructor materials, surgical supplies, and scholarships to help support the program. Credits earned in the CST certificate also articulate directly into the college's surgical technology associate degree program. Currently, the group is exploring the possibility of adding the college component to the high school veterinary technician program at C4.

Broadening the Discussion. In discussions between the educational partners and the area health-care providers, the lack of registered nurses was clearly identified as one of the major workforce issues in the area. To help the college increase the number of slots in its nursing program, the hospital provided two full-time faculty to the college. Several local hospitals have also allowed staff nurses to supervise clinical experiences for students as part of their assigned duties.

In addition, a new dual-admission nursing track is being implemented for Ivy Tech and IUPUC students. The students will enter the ASN program at Ivy Tech and continue directly into the BSN program delivered by the Indiana University School of Nursing. The program allows for students to spin off into a practical nursing track, or to earn their BSN in three semesters beyond the ASN. A Department of Workforce Development grant will further expand capacity by providing three additional full-time nursing faculty and a loan-forgiveness program for nursing faculty who complete the Master of Nursing degree and commit to teaching at the college for an extended period after obtaining the degree.

The CCTI project has provided the impetus for increased commitment to collaboration between employers, community leaders, and education that will continue to provide benefits to Columbus and southeastern Indiana for many years to come. The relationships forged by this project are strong and will continue to grow to meet new and emerging needs of the region.

ADVISING AND STUDENT SUCCESS

Student success is not wholly dependent on experiences in the classroom. In particular, students traditionally underrepresented in college are likely to need other kinds of support to graduate high school and enter and succeed in college. In some cases, special efforts are needed to ensure that students learn about different pathways and view them as viable options. Some high school students may not know where the nearest college campus is located or what will be required of them in college courses (Barnett & Bragg, 2006). Others may need help to figure out their career direction and to take the right sequence of pathway courses.

CCTI sites offer different kinds of extra assistance to students, ranging from opportunities for career exploration to special advisement and mentoring. Some incorporate online resources; others are primarily focused on building one-on-one relationships. Again, as these student success strategies are developed, they are typically available to a wide range of students, including those not officially enrolled in CCTI career pathways. These two examples show very different approaches to supporting student success.

METAMORPH: EARLY SIGNPOSTS ON THE LEARNING JOURNEY

Sinclair Community College, Ohio

Ron Kindell

Program Overview. Keeping in mind that Ohio students must choose a career-oriented curriculum as early as tenth grade, a team of secondary, postsecondary, and business partners working with Sinclair Community College in CCTI created MEtaMorph, a career journey curriculum for ninth grade students. Introduction of career exploration opportunities in ninth grade pays huge dividends to community colleges in that future students begin to learn what they need to know to enter occupational education pathways.

Community college completion rates are alarmingly low. Some studies show that only 14 percent of first-time, full-time freshman in the community college finish a degree or certificate in 150 percent of time—that is, for a two-year degree, three years, and for a one-year certificate, a year and a half. SCC believes that students who are clear about their career goals are more likely to complete their education. In the Dayton area, this begins with participation in MEtaMorph.

At every level, the MEtaMorph career journey curriculum is about transformation. Conceived and developed in response to a career guidance gap at the ninth grade level, MEtaMorph has evolved into a model for both collaborative curriculum development and integrated, simultaneous learning experience delivery. MEtaMorph embeds career guidance tools and techniques within the framework of English language arts standards, and it uses a web-based delivery system. In the spirit of the No Child Left Behind Act, it emphasizes academic rigor, articulated performance standards, and the assessment of student capabilities.

The Program. A web-based curriculum that can easily be adapted by other school districts nationwide, MEtaMorph encompasses in-depth career exploration that includes assessment, career goal setting, high school planning, and postsecondary planning. One unit features research about and financial planning for college. MEtaMorph covers high school language arts competencies including researching, analyzing, reporting, essay writing, and critical thinking, and incorporates computer and internet competencies such as keyboarding, web searches, and links. An important parental component enhances communication at home regarding a child's career goals.

MEtaMorph provides a context for life and for learning. Participation in the unit appears to be the first time many students make the powerful link between education and work, and as a result, begin to take charge of their life and learning decisions. The curriculum encourages students to begin making a real, meaningful connection between their personal vision, their long-range career goals, and the educational pathway that connects the two. Equally important, students create their own customized plan of action to guide the important decisions they will begin making in tenth grade.

The Process. The MEtaMorph development process was a fast-paced, collaborative effort. The process started with the premise that educational transformations are dependent on academic rigor and well-defined pathways. The working team consisted of 23 people representing five counties and nine school districts as well as the Center for Occupational Research and Development and the Dayton Area Chamber of Commerce. This team was led by the CCTI project director, who guided each stage of the project from start-up through launch to ensure that work was completed in one year.

The initial content development process was focused and accelerated. In one intense week, the cross-functional working team translated the curriculum flow into specific competencies, brainstormed lesson activities, identified relevant career-based websites, and built lesson and activity content using the pre-established templates. Smaller groups of two or three teachers and career development coordinators collaborated to develop each lesson from the targeted curriculum flow.

The Curriculum. MEtaMorph consists of seven lessons, including an initial introductory lesson plus six content lessons. The unit requires approximately fifteen 45-minute periods, or roughly three weeks. Each lesson includes assessment questions or tools, along with reflective questions designed to help students see how their career knowledge and vision are evolving. To analyze the overall effectiveness of the pilot content and strategy, pre- and post-surveys are conducted. These assessments will continue as MEtaMorph is implemented across more schools and districts.

The sequence of lessons moves from highly general, broad-ranging topics and thought processes to more specific education and career considerations. This pattern uses a whole-to-part strategy and emulates the module architecture developed with National Science Foundation funding by the National

Center for Manufacturing Education at Sinclair Community College. The curriculum structure and discovery-based approach reinforce the defined Ohio Graduation Test instructional strategy, which helps students begin to see their education and career as a series of interconnected decisions and events over which they can exert influence and control rather than a collection of random happenings. The career-journey theme emphasizes that self-discovery, education, and career preparation are ongoing processes. The theme also provides a connecting thread that ties the diverse lesson topics into a cohesive whole.

The Impact. MEtaMorph was tested in a variety of schools using a carefully designed pilot process. The primary goals were to determine if the new curriculum was sound, easy for teachers and students to use, and effective in helping students understand critical education and career options. The pilot test findings were dramatic. MEtaMorph participants demonstrated statistically significant improvements in career awareness and planning knowledge after completing the web-based lessons and activities. They also demonstrated significantly more career awareness than the tenth-grade control group, which did not participate in the MEtaMorph curriculum. MEtaMorph was significantly effective across student achievement levels and with both boys and girls. The English teachers reported that they found the material valuable not only in developing career awareness, but also in developing students' language arts skills. In addition, they reported that students enjoyed working with the materials. The pilot test results are unequivocal: MEtaMorph works!

MINORITY MENTORING THROUGH THE ALANA PROGRAM

Prince George's Community College, Maryland
Donna Gaughan

Program Overview. Student success continues to be one of the primary concerns of postsecondary education in the United States. Many colleges offer special opportunities to help students become more successful in their educational endeavors. At Prince George's Community College, student success is mentioned in the school's mission statement: "Prince George's Community College offers opportunities for individuals to realize their potential in a challenging, learning-centered environment. The college provides cost effective, high-quality programs and services that respond to student and community needs."

The CCTI project at Prince George's Community College is one of many programs that help to promote student success. Given the need for improved law enforcement training in Prince George's County and the highly regarded Criminal Justice, Forensics, and Paralegal Studies Department, this career area was a natural for the college. Potomac High School (PHS), a key partner in the project, enrolls approximately 1,150 lower- to middle-class students; 99.7 percent are African American. PHS has been recently restructured into learning communities around six schools containing 13 career academies. The Criminal Justice Academy is the primary focus for the high school activities in this project.

Minority Mentoring and Engagement. One of the most successful programs offered at the college for CCTI and other students is the ALANA Experience. At Prince George's Community College, the mission of ALANA—African, Latin, Asian, and Native American—"is to improve the academic success, retention, transfer, and graduation of students through structured support and mentoring relationships."

The ALANA Experience provides several services. First, ALANA offers a mentoring program. Mentors who volunteer for the ALANA Experience include community representatives, faculty, staff, support services, and peer mentors. Mentors use their own experience and knowledge to support Prince George's Community College students from the African, Latin, Asian, and Native American cultures. In addition, ALANA offers career and academic support, including small group or individualized self-assessment, exploration, decision making, planning, and implementation of the career development process. In addition, ALANA offers academic monitoring, counseling, and tutoring, as well as assistance in study skills development.

ALANA newsletters provide information for students interested in joining the ALANA Experience and feature information on semester special events, transfer, study tips, special ALANA student recognitions, and job opportunities. The newsletters also update students on special campus opportunities and information pertaining to academic studies. Campus visits to four-year colleges and universities are also sponsored by the ALANA program. ALANA schedules and provides transportation for campus visits to the University of Maryland at College Park, Baltimore, and the Eastern Shore; Bowie State University; Howard University; and Morgan State University. These campus visits open doors for Prince George's Community College students by introducing them to nearby transfer options and providing more information for those who are already interested in transferring to a university.

ALANA hosts multiple social and cultural activities that assist students in networking. Not only are students involved in the planning and implementation of these events, but faculty, community representatives, student support personnel, and support staff assist also. These special cultural activities provide a unique learning atmosphere among those who share a common experience. ALANA also hosts "Men Moving Forward," a program for men only, which helps promote leadership qualities and academic success, and "Meeting in the Ladies' Room," which provides women with monthly forums focusing on the special concerns of women, including support networks, strengthening self-identity, and academic success.

ALANA provides unique opportunities for students of multiple cultural backgrounds to be more successful in their academic and professional endeavors. Prince George's Community College is noted for this trailblazing effort to assist students from the African, Latin, Asian, and Native American cultures.

CTE AND DATA-DRIVEN DECISION MAKING

Data-driven decision making is widely viewed as a means for high schools and colleges to use appropriate educational strategies with the students for whom they will work best. It is also used to make sure no groups of students are falling behind others, and it can lead to targeted interventions for those who are. Finally, analysis of data is at the center of program evaluation, allowing leadership to make adjustments and develop a more effective program or approach. Increasingly, educators are encouraged to use data in a systematic way to improve student experiences and outcomes (CCSSE, 2006). This is reinforced by the growing use of accountability systems and their accompanying rewards and penalties.

While there has been a tendency to focus on the performance of students in traditional academic subjects, data-driven decision making is equally relevant in career technical education. The CCTI project encourages its sites to gather data on student performance as a way to improve the program model. Some of these data have been provided through the CCTI evaluation system, as well as by the opportunity to administer the Community College and High School Surveys of Student Engagement. Other data come from the colleges and high schools themselves in the form of regularly collected institutional data or specific program evaluations. In either case, the data are often used for improvements in high school and college systems that extend well beyond the scope of CCTI.

USING CCSSE AND HSTW-TAV TO IMPROVE STUDENT EXPERIENCES

Southwestern Oregon Community College, Oregon
Bill Yates

Program Overview. Southwestern Oregon Community College has planned and implemented a host of activities to meet the five principal goals of CCTI. In collaboration with two district IT-focused charter high schools, career pathways in information technology have been developed and are expected to be a model for the state. In addition, special emphasis has been given to increasing the success of high school and college students in mathematics and language arts.

The Community College Survey of Student Engagement (CCSSE) and High Schools That Work–Technical Assistance Visit (HSTW-TAV) were two particularly fruitful events that helped Southwestern and its two high school partners plan and implement strategies to improve student engagement and performance. These experiences serve as examples of the way useful and timely data can be used to improve student opportunities and outcomes.

CCSSE as a Learning Tool. CCSSE is designed to help colleges understand the needs, experiences, and attitudes of their student population in order to increase opportunities for student engagement. Southwestern's student population was first sampled using the CCSSE survey instrument during the winter quarter of 2004. A similar survey, the High School Survey of Student Engagement, was administered at North Bend High School, one of our CCTI partner high schools.

Results from CCSSE helped Southwestern better focus its efforts to serve students. For example, the results of the survey prompted the formation of a collegewide retention committee composed of both faculty and administration. The retention committee's major goal is to infuse a new, deeper awareness of the key role that faculty play in their work as advisors to students in our programs. Advising and recruiting subcommittees were also formed to ensure that faculty are driving the process and remain engaged.

Over the last two years, the retention committee has been active in generating and facilitating several initiatives. The

committee organized staff development activities for returning staff during the fall term of 2005, and during the last two years, the committee has sponsored several in-depth advising nights, helping students learn about available scholarships and how to apply for them. Advisors have been encouraged to follow up with at-risk students via phone calls, email, and other forms of more direct contact. Recently, a major document was generated to better define advising, and it is currently being discussed with faculty and administration. Intensive consultations continue on how to further enhance the advising program at Southwestern.

Other changes were also generated based on CCSSE outcomes. For example, recommendations acted on by the faculty senate and faculty in general led to the establishment of a set of collegewide educational competencies. These CCTI-based competencies are now part of every class syllabus. Also, advising efforts were restructured so that Information Technology (IT) faculty remain in contact with partner high school students to actively assist and mentor students interested in IT programs at the college. In summary, CCSSE findings were used in many ways to change or refine our efforts in better serving our students.

Improving College Systems With HSTW-TAV. Another source of useful data for college improvement was the High Schools That Work–Technical Assistance Visit (HSTW-TAV) in February 2005. The HSTW-TAV teams provided qualitative data and generated individual reports for all three institutions involved with the CCTI project. Concurrent site visits allowed members of each school to get an inside look at partner institutions and consult with their colleagues in other institutions. The visits provided side-by-side discussions that reduced resistance to communication both during and after the visit. The reports highlighted institutional strengths and weaknesses and gave the college and each high school an opportunity to improve programs, share resources, and work to resolve problems.

Teams comprised of faculty from all three institutions assisted in the HSTW visit at each site. More and better communication between administration and faculty across institutions resulted in a more productive sharing of ideas and resources in a variety of forums. Intensive discussions among the math, reading, writing, and IT faculty at all three institutions helped the process of aligning curriculum, enhancing programs, and sharing strategies to improve advising. The complex process

of developing career pathways for grades 9-14 was also aided during and after the visitation. Because of the focused systemic effort that resulted, student experiences at all levels are improving in mathematics, writing, reading, information technology, and advising.

The HSTW visit also strengthened the synergy between the CCTI goal centered on reducing remediation and improving advising strategies at all three institutions. ASSET testing of all sophomores at both schools provided data for each school to use in advising its students. As a result of this decision, student math, reading, and writing scores are used to gauge how well students are progressing in these three areas compared to the scores of fully prepared entering college freshmen. This gives the high school student two years to gain identified skills and knowledge needed

for a smooth transition to college or the workplace. Academic and career counseling assist students and their parents in making informed decisions about their high school program. Within this context, North Bend High School shared its strategies for advising students and parents with Coos Bay High School, and Coos Bay adopted similar strategies the following spring.

Both CCSSE and HSTW-TAV activities have yielded many opportunities for enhanced consultation between the college and the schools, and for improvement in programs and advising within schools. These activities have led to a better set of student experiences that are far richer as a result of the hard work of applying the lessons gleaned from the CCSSE and HSTW-TAV initiatives.

REFERENCES

- Achieve, Inc. (2004). *The Expectations Gap: A 50-State Review of High School Graduation Requirements*. Washington, DC: Author.
- Adelman, C. (2006). *The Toolbox Revisited: Paths to Degree Completion for High School Through College*. Washington, DC: U.S. Department of Education.
- Alliance for Excellent Education. (2006). *Paying Double: Inadequate High Schools and Community College Remediation [Issue Brief]: August*. Washington, DC: Author.
- Barnett, E., & Bragg, D. (2006). Academic Pathways and Increased Opportunities for Underserved Students: Crosscutting Themes and Lessons Learned. In D. D. Bragg & E. A. Barnett (Eds.). *Academic Pathways To and From the Community College*. New Directions in Community Colleges. San Francisco: Jossey-Bass.
- College and Career Transitions Initiative (CCTI). (2007a). About CCTI. League for Innovation in the Community College. Accessed at www.league.org/league/projects/ccti.
- College and Career Transitions Initiative (CCTI). (2007b). Characteristics. League for Innovation in the Community College. Accessed at www.league.org/league/projects/ccti/cp/characteristics.html.
- Community College Survey of Student Engagement (CCSSE). (2006). *Act on Fact: Using Data to Improve Student Success*. Austin, TX: Author.
- Crawford, M. (2001). *Teaching Contextually: Research, Rationale, and Techniques for Improving Student Motivation and Achievement in Mathematics and Science*. Waco, TX: Center for Occupational Research and Development.
- Jenkins, D., & Spence, C. (2006). *The Career Pathways How-to Guide*. New York: The Workforce Strategy Center.
- Lankard, B.A. (1995). *Business-Education Partnerships. ERIC Digest No. 156*. Columbus, OH: ERIC Clearinghouse on Adult Career and Vocational Education.
- Northern Virginia Community College (NVCC). (2006). K-12 Outreach: Healthcare Careers Bridge Program. Medical Education Campus. Accessed at www.nvcc.edu/medical/k12/bridge/.
- Pathways to College Network (2007). *Questions That Matter: Connecting Research, Policy, and Practice to Improve College Access and Success*. Washington, DC: Author.
- Pennsylvania Department of Education. (2001). Project 720. Accessed at www.pde.state.pa.us/c_and_i/cwp/view.asp?a=3&q=112829.
- Strategic Learning Initiative at WestEd (SLI). (2007). The Reading Apprenticeship® Framework. Accessed at www.wested.org/cs/sli/print/docs/sli/ra_framework.htm.
- For more information about the College and Career Transitions Initiative, visit www.league.org/league/projects/ccti/index.html.

ACKNOWLEDGEMENTS

This document could not have been written and published without the involvement of many people. First, we are grateful to the representatives from each of the pilot CCTI community colleges who contributed examples of practices involving systems change from their site partnership. Second, the outstanding practices described here were identified in consultation with current and former members of the CCTI Qualitative Evaluation Team, Terry O'Banion, Ken Kempner, and Debra Bragg, with whom I served. Laurance Warford has been a constant source of information and encouragement in the development of this publication. Credit also goes to the staff of the League for Innovation for their continued and excellent assistance in providing leadership and service to CCTI over the past five years. Thanks also goes to our sponsor of this publication, EMSI, for making it available for those who will use the information to improve student transitions in their service area. Finally, the Office of Vocational and Adult Education, U.S. Department of Education deserves to be recognized for having the vision and leadership to create and implement CCTI and make stories like those contained in this publication possible.

Elisabeth A. Barnett

The League for Innovation in the Community College is an international organization dedicated to catalyzing the community college movement. The League hosts conferences and institutes, develops web resources, conducts research, produces publications, provides services, and leads projects and initiatives with more than 900 member colleges and campuses, 160 corporate partners, and a host of other government and nonprofit agencies in a continuing effort to make a positive difference for students and communities. Information about the League and its activities is available at www.league.org.

The opinions expressed in this book are those of the authors and do not necessarily reflect the views of the League for Innovation in the Community College, EMSI, or the United States Department of Education, Office of Vocational and Adult Education.

Changing Systems, Changing Lives: The Broader Impact of the CCTI Initiative ©2008 League for Innovation in the Community College.

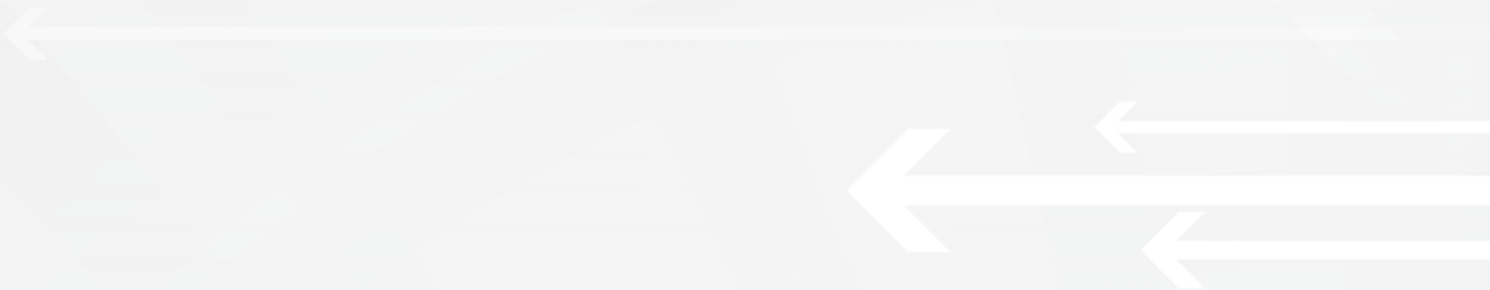
League for Innovation in the Community College
4505 E. Chandler Boulevard, Suite 250
Phoenix, AZ 85048
Email: publications@league.org
Fax: (480) 705-8201

ISBN: 978-1-931300-51-3



Now one company with
CCbenefits Inc.

CCbenefits provides Socioeconomic Impact reports and web-based tools to community and technical colleges throughout the U.S. and Canada. Recently the company merged with Economic Modeling Specialists, Inc. (EMSI), the creators of Strategic Advantage, a cutting-edge, web-based labor market analysis tool that brings together workforce, education, and economic development perspectives through the successful integration of over 70 federal and state databases. The new company, doing business as EMSI, will continue to provide the cutting-edge data, in-depth socioeconomic impact reports, and user-friendly web-based tools that clients of CCbenefits have come to expect. The company's mission is to provide solutions for all stakeholders in regional development and to better serve community colleges involved in diverse regional partnerships. For more information, please visit www.economicmodeling.com or contact Rob Sentz at rob@economicmodeling.com.





LEAGUE *for* INNOVATION *in the* COMMUNITY COLLEGE
4505 East Chandler Boulevard, Suite 250 · Phoenix, Arizona 85048
(480) 705-8200 · www.league.org