University of California at Berkeley

Planning Guide

for Career Academies and Pathways

CCASN
College & Career Academy Support Network

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2014

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Chapter I
What is a career academy?

The first career academy began in 1969 at Edison High School in Philadelphia. It enrolled 30 students, was called the "Academy of Applied Electrical Science," and was supported in part by the Philadelphia Electric Company. From that small beginning has grown an estimated 10,000 career academies today in approximately 7,000 high schools, with upwards of one million students enrolled. Several states have academy networks, as do many individual districts, and a few districts have gone all career academy. And there are now several organizations working at the national level to support career academies; these are described in Chapter VI, with links to their websites.

While the U.S. Departments of Education, Labor, Justice, Health and Human Services, and Transportation have all shown interest in career academies, there is no federal agency that officially oversees them. A national survey conducted in 2012 by the National Center for Educational Statistics found 6,300 high schools with at least one career academy. The Small Learning Community grants program administered by the U.S. Department of Education reports that career academies were the most common variety of program implemented under that initiative in the ~1,500 high schools receiving such grants during the first decade of the 2000s.

Definitions of career academies have evolved over the years. In 1984 the State of California passed legislation defining what a *California Partnership Academy* was, since updated several times, providing a precise definition in that state. In 1999 the Career Academy Support Network (CASN) at UC Berkeley gathered the various definitions of career academies from the states and organizations supporting them and merged these into a "common definition." In 2004 this was expanded into the *Career Academy National Standards of Practice*, which was updated in 2012. The National Career Academy Coalition (NCAC) has developed a set of rubrics to accompany these standards and offers accreditation-like reviews of academies.

This common definition arrived at among national support organizations has three central features:

A small learning community within the larger high school
A curriculum that combines a career focus with meeting college entrance requirements
Partnerships with employers, community members, and post-secondary institutions

Are career pathways different?

California has been the most active state in implementing and supporting career academies, and in recent years the California Department of Education has been complemented by a parallel effort of the James Irvine Foundation. The Foundation has developed an initiative called Linked Learning, and uses the term "pathways" rather than "academies". It has provided grants to nine large school districts in California that have worked to implement this approach district wide. It has also sponsored ConnectEd California to support these efforts, and the Linked Learning Alliance to provide leadership in Sacramento.

Linked Learning pathways follow all the same principles as career academies: they emphasize preparing students for both college and careers; focus on academics as well as careers and the integration of the two; require strong student support; and incorporate work-based learning, via a continuum of activities that builds over the high school years. To the degree they are different, it is that they *must* include a ninth grade element, don't insist on cohort scheduling (although they emphasize teamwork among academic and career-technical teachers), and are usually larger in terms of student numbers. They also require a strong district commitment, viewing this approach as a broad reform strategy, while academies can exist as a single "pocket" program in a high school or district. Linked Learning pathways incorporate many career academies, and also include a few small career-themed high schools. They are offered in a wide variety of career fields in each district.

A Small Learning Community

A career academy is a small learning community within a high school, which selects a subset of students and teachers for a two-, three-, or four-year period. Students usually enter through a voluntary process; they must apply and be accepted, with parental knowledge and support. While academies vary in size, they usually have from one to four sections of students at each grade level, or 100-300 students in all. Academy classes are often blocked back-to-back in the daily schedule, and students attend as a group, what is referred to as "cohort" scheduling. Students are able to complete academy and graduation requirements within the regular school day, with the exception of work internships and possible concurrent enrollment in college classes.

A career academy involves teachers from different subjects working together as a team. This team manages the program, with one or two lead teachers usually serving as the coordinator(s). Teams usually participate in professional development, particularly in implementing the key features of the model and gaining exposure to the career field. Team members have shared planning time, usually a daily common planning period, and the lead teacher(s) often have some release time. The joining of a group of students for several periods each day with teachers who they come to know well provides a family-like atmosphere, nurturing close student-teacher ties. Academy students also participate in required and elective classes outside the academy, as well as other activities such as clubs and sports. An academy requires administrator and counselor support.

College preparatory curriculum with a career theme

Students in a career academy have a mixture of career (usually one) and academic (usually two or three) classes at a time. These classes meet entrance requirements for four-year colleges and universities. They are linked to academic and industry standards, encourage high achievement, and show students how their subjects relate to each other and the academy's career field.

The career classes develop knowledge in a broadly defined field, and are designed to expose students to the full vertical range of careers in that field. Projects require students to bring together academic skills across their subjects and apply these to community and work settings outside the school. Usually the sophomore year involves a series of speakers from, and field trips to, employers and nearby colleges. The junior year includes job shadowing and/or a mentor from a supporting employer or college. The summer following the junior year and/or senior year includes work experience, a paid or unpaid work internship or community service assignment. Students are provided with college and career counseling, forming a post-graduate plan that usually includes at least some college (broadly defined), leading to a productive career.

Partnerships with employers, communities, and higher education

The academy career theme is selected locally, based on an industry that is healthy and can provide a cadre of partners interested in supporting the program. Employers from a group of companies in the selected field, and two- and four-year college representatives, work as partners in the academy, serving on a steering committee (along with teachers, administrators, and often parents and students) that oversees the program's development and operation. This committee helps to plan the various activities in which partners participate: as speakers at the school; field trip and job shadowing hosts; mentors, career-related "big brothers and sisters"; and work internship or community service supervisors. College partners, most often community colleges, also often arrange dual enrollment classes for juniors and seniors to give academy students a head start on postsecondary education, and employer partners often hire graduates.

This three-part definition http://casn.berkeley.edu/resources.php?r=248&c=21 can be viewed in either chart or graph http://casn.berkeley.edu/resources.php?r=249&c=21 form at CCASN's website: http://casn.berkeley.edu/resources.php. While there are still variations and gaps in the way this approach is implemented in various places around the country, this is an agreed-upon definition of what a successful career academy should include. The full ten-part *Career Academy National Standards of Practice* are available

here (or at NCAC's website: http://www.ncacinc.com/). As a footnote to this section, it might be noted that the "Career Academy Support Network" has added "College and …" to the front of its name, to make clear that this approach aims to prepare students for *both* college (in the broad sense, *all* postsecondary educational options) and career. Academies are *not* a traditional vocational program aiming at specific job training. While the title of this guide remains "Planning Guide for Career Academies (and Pathways)", since that is the term still generally used in the field, this is an important point.

Who agrees with this definition?

Following are the organizations that have agreed on the national definition of career academies and the National Standards of Practice:

The Association of Career and Technical Education (ACTE), Alexandria, VA

The California Partnership Academies, California Department of Education, Sacramento, CA

The Center for Secondary School Redesign (CSSR), West Warwick, RI

The Center for the Social Organization of Schools (CSOS), *Talent Development High Schools*, Johns Hopkins University, Baltimore, MD

The College and Career Academy Support Network (CCASN), UC Berkeley, Berkeley, CA

ConnectEd: The California Center for College and Career, Berkeley, CA

MDRC, New York, NY

The National Academy Foundation (NAF), New York, NY

The National Association of State Directors of Career Technical Education Consortium (NASDCTEc), Washington, D.C.

The National Career Academy Coalition (NCAC), Nashville, TN

The Philadelphia Academies, Inc., Philadelphia, PA

The Southern Regional Education Board (SREB), sponsor of *High Schools That Work* (HSTW), Atlanta, GA

Chapter II

Why start an academy?

One reason why growing numbers of states, districts, and high schools have decided to start career academies is that they have been found to be effective in improving students' performance. Studies of several different types have been done. What follows is a brief recap (references for these are contained at the end of this guide; many can be found at CCASN's website: http://casn.berkeley.edu/resources.php

Several studies in California have found that academy students perform better than similar students in the same high schools who are individually matched with academy students on demographic characteristics and ninth grade records of grades, absenteeism, and disciplinary problems. An evaluation of the first two academies in California in the early 1980s found that academy students in grades ten through twelve had better attendance, earned more credits, obtained higher grades, and were more likely to graduate than their comparison groups (Reller 1984; additional citations in Stern, Raby, and Dayton 1992; see also Raby 1995).   From 1985 through 1988 a similar evaluation of the first ten state-funded academies in California showed substantial and statistically significant advantages for academy students in attendance, credits earned toward graduation, grade point averages, and retention through high school (Dayton et al. 1989; Stern et al. 1989).

Annual data collected from state-funded academies in California continued to show improvement after students entered an academy and while they were enrolled in it (Dayton 1997; Warren 1998). High school dropout rates in academies averaged about seven or eight percent over three years — about half the rate in the general population of California students, despite the fact that state-funded academies are required to recruit a majority of students who are economically or educationally disadvantaged. Although these data describe only the performance of academy students, without comparison groups, they are consistent with the comparison-group evaluations.

In another study, Maxwell and Rubin (1997) surveyed former high school students from a large California school district one or two years after their graduating year. They found that students who had attended career academies were at least as likely

to be enrolled in four-year colleges as students who identified themselves as having been in the academic track in high school. Both the career academy and academic track graduates had significantly greater likelihood of enrolling in four-year college than graduates who classified themselves as having been in the high school general track. This was in spite of the fact that academy students had lower average scores on sophomore reading tests in high school, and were less likely to be native English speakers, compared to students in the general track.

Maxwell and Rubin (2000) also analyzed school district records on academy and non-academy students. They found that students in career academies obtained significantly better grades. This was not due to easier grading standards within the academies: Maxwell and Rubin found that courses within most of the academies actually awarded *lower* grades than non-academy courses in the same subjects. Furthermore, when Maxwell and Rubin divided students into high, middle, and low groups according to tenth grade math and English test scores, they found in each group that academy students obtained higher grades than non-academy students.

Maxwell (1999) extended the Maxwell-Rubin study to follow graduates of career academies and other graduates from the same school district that enrolled at a nearby campus of the state university. She found that the academy graduates were more likely to come from high schools with large proportions of low-income minority students. After taking this into account, the academy graduates were less likely to need remedial coursework at the university level, and were more likely to receive their bachelor's degrees, compared to the other graduates from the same district. These findings suggest that academies help low-income students finish not only high school but also college. They imply that the improvement in high school graduation rates was not accomplished by lowering academic standards in the career academies.

MDRC, a large nationally-focused research firm, began a nine-site study of career academies in 1993 by creating a list of students who applied to the career academy at each site, and choosing at random those who would be admitted to the academy and those who would not. The latter constituted the control group. Unlike the matched comparison groups in earlier studies, all students in the MDRC control group had taken the initiative to apply to the career academy. They therefore shared the same unmeasured motivation, ambition, or other traits that might characterize the academy student.

MDRC found that academy students overall earned a larger number of course credits needed for graduation, and were more likely to have positive developmental experiences such as working on a volunteer project. The strongest and most pervasive differences were found among students at highest risk of school failure. Among this subgroup, the academy students attended school more regularly, earned more course credits, were more likely to participate in extracurricular activities and volunteer projects, and were less likely to be arrested. The dropout rate for the high-risk subgroup was reduced from 32 percent in the control group to 21 percent among the academy students (Kemple and Snipes, 2000).

MDRC continued to track the students in its study for eight years after high school graduation. Data from this follow-up showed that academy students graduated at about the same rates as non-academy students, and attended post-graduate education at the same rates, although in both cases these rates were substantially higher than national averages for similar students. More positively, employment rates for academy graduates were significantly higher, as were earnings, especially among young men of color. In addition, rates of stable family formation were found to be higher among academy graduates (Kemple, 2008).

In the March 2007 ConnectEd, the California Center for College and Career, issued a report conducted in cooperation with the Career Academy Support Network at UC Berkeley, entitled *A Profile of the California Partnership Academies 2004-05*. This study involved approximate 33,000 students enrolled in these 290 career academies in 2004-05. The majority of these students came from high schools with below-average state test scores, and a minimum of 50% were required to meet at-risk criteria to qualify for academy entry, mostly based on poor ninth-grade performance. In spite of these selection criteria, the study found that the academy students were passing the state's high school exit exam at higher rates than state averages, graduating at higher rates than state averages, and meeting the state's a-g college entrance requirements at higher rates than state averages.

In October 2011 the College and Career Academy Support Network at UC Berkeley issued an update of this report entitled *A Profile of the California Partnership Academies 2009-10*. This study involved approximately 48,000 students enrolled in 467 academies that year, who met the same definitions as the 2004-05 report. This study replicated virtually all of the findings of the 2004-05 study. Two findings especially

stood out: 95% of CPA seniors were found to be graduating on time, compared with a statewide rate for all students of 85%; and 57% of CPA graduates had met the requirements for UC/CSU entrance, compared with a statewide rate of 36%.

In 2009 the James Irvine Foundation commissioned a study by SRI International of the nine districts supported through its Linked Learning initiative. The fourth year report from this study (2014) is entitled *Taking Stock of the Linked Learning District Initiative; Fourth Year Evaluation Report.* This report (Executive Summary) focused primarily on the six districts funded earliest, and 9th and 10th grade students, where the largest numbers of students and career pathways were involved. It reported that 9th grade pathway students earned significantly more credits than similar peers in all six districts included; that 10th grade pathway students had accumulated more credits than similar students in seven of eight districts; and that 10th grade pathway students were 6% to 17% more likely to be on track to complete the UC/CSU entry requirements. It also found a higher rate of pathway student retention in the districts where they began high school.

This body of research is summarized more fully in Career Academies: A Proven Strategy to Prepare High School Students for College and Career). However, there are certain results academies have *not* shown. For example, most studies have not shown an academy (or pathway) effect on standardized test scores. As cited above, the MDRC study showed reduced differences over time between academy and non-academy control students, especially by the point of high school graduation (Kemple, MDRC, 2001). Yet no study has shown any negative effect from career academies, and virtually all have shown some benefits. There are few if any high school reform approaches that can match this record.

Why *shouldn't* you start a career academy?

With the evidence in support of career academies, and their rapid and continuing growth, this may seem like a strange question. Yet there are good reasons not to start a career academy. In fact, one path to avoid is to get caught up in the enthusiasm of this approach thinking it will solve every problem in high school, without looking at the difficulties involved in launching academies or what they probably won't accomplish. Here's a brief summary of what to be cautious about.

Academies are a great deal of work. They require substantial changes in the way high schools operate. Administrators, counselors, and teachers all have to be ready to change their practices in certain ways. Scheduling has to be done differently. Curriculum needs to change. Employers, college representatives, other community members, and parents need to be involved and have a stronger role in the way the school functions. All this requires substantial work and involves going through a difficult and sometimes-contentious change process.

Not all academies succeed. On average, academies cause improvements in student performance. Within these averages are academies that failed. It is a complex approach, and if poorly implemented, may cause more problems than it solves. Academies that are well implemented account for the positive results that have been found, but the quality of implementation and the results for students are correlated. Simply deciding to go this route, without doing the hard developmental work and carefully monitoring results, probably won't help.

Academies can cause new problems. While academies generally have positive effects on student performance, and most students and teachers like them better than more traditional high school structures (Kemple, 1997), they often cause new problems. Scheduling becomes more difficult, due to the need to group students together across several classes. Including AP, IB, honors, language development, and special education classes in the schedule is more difficult. Teachers who teach upper level classes and don't want to relate their subject to other subjects or a career field may not like academies. Teachers who like being a "sage on the stage" rather than a "guide on the side" may not like academies, which tend to be student centered. Parents are likely to become more involved, and to bring pressure on the high school for high quality instruction. Employers are likely to become more involved, and to bring pressure on administrators for better-prepared graduates. Not everyone likes such pressure.

Academies may not change standardized test scores. Evidence to date suggests that career academies have had little if any impact on test scores, at least unless combined

with improved teaching and learning methods within their small learning communities. Academies have been shown to improve motivation and the indicators that reflect that, such as attendance, retention, grades, and graduation rates, but there is little evidence to date that they improve test scores. This may change as the common core reforms take effect, given their emphasis on problem solving and applying knowledge to real-world problems, which aligns well with illustrating the applications of academics to career fields. It is also true that the academic effects found for academies seem to fade over time, after students leave high school, although they appear to have positive effects on eventual employment.

There are lots of good reasons to start career academies, but they are not a panacea for all the problems of high school. They should be approached cautiously, and if attempted, implemented carefully and thoroughly. There is guidance and help available in this process, some of it covered in the next three chapters, but experience suggests it isn't wise to begin an academy expecting quick, easy, sure-proof results.

Chapter III

How do you begin?

Career academies and pathways often start with one or a few teachers or administrators learning about this approach and deciding it would be a good idea for their high school. Or perhaps their district, learning about the evidence, decides this is a worthwhile approach, wants to implement it on a wider basis, but doesn't really understand all the complexities and details. This often leads to the question: How do we get from thinking this is a good idea to actually implementing academies/ pathways?

While there is no pat formula, usually the next step is sampling interest more broadly in the school, district, and community, and sharing the information that has made those who are interested with other teachers, counselors, administrators, and the school board. It's also sensible to touch base with leaders in industry, possible employer supporters, and nearby two- and four-year colleges, and of course parents and students. Experience suggests that all these stakeholders need to be on board.

One of the first and most important decisions in starting a new academy is the choice of career field. Academies draw on the inherent interest students have in learning about some feature of the world of work to motivate them to take seriously their core academic subjects. Thus the career field needs to be one that holds interest for students. It also needs to be one with interested employers in the community who will provide the support needed for an academy: advisory committee members, speakers, field trip hosts, mentors, and internship supervisors. It helps if there are post-secondary programs in nearby colleges students can advance to following high school. And it needs to be an industry that is healthy and growing, so there will be opportunities available when academy students complete their education and are ready to seek employment.

The career field also needs to be well defined in terms of breadth. Too narrow a career field will limit employers and stunt student interest. "Radiation technician", for

example, is too narrow; "health" is better. On the other hand, too broad a career field makes it impossible to identify relevant employers or curriculum. "Computers", for example, is too broad; they have applications in all fields.

Economists usually categorize economic activity into industries or clusters. A national project of the state directors of career and technical education, called "Career Clusters", has been helpful in defining those useful for instruction. These 16 clusters are displayed below. They are accompanied by "Plans of Study" for the several Pathways in

Taxonomy of Industries/ Career Clusters

Agriculture, Food and Natural Resources	**Hospitality and Tourism**
	Human Services
Arts, A/V Technology and Communication	**Information Technology**
Architecture and Construction	**Law, Public Safety, Corrections and Security**
Business, Management, and Administration	**Manufacturing**
Education and Training	**Marketing, Sales and Service**
Finance	
Government and Public Administration	**Science, Technology, Engineering and Mathematics**
Health Science	**Transportation, Distribution and Logistics**

each cluster, a total of 79. These Plans of Study are based on the knowledge and skills identified for each Cluster and Pathway. Detailed information can be obtained about all this at http://www.careertech.org/career-clusters.

California uses a slightly different taxonomy, with 15 industries. If you'd like to see a chart that crosswalks the two, including a list of pathways within each, take a look at CASN's *Career Academy Course Sequences* guide here.

California's Taxonomy of Industries/ Career Clusters

Agriculture and Natural Resources

Arts, Media, and Entertainment

Building and Construction Trades

Business and Finance

Education, Child Development, and Family

Energy, Environment, and Utilities

Engineering and Design

Fashion and Interior Design

Health Science and Medical Technology

Hospitality, Tourism, and Recreation

Information and Communication Technology

Manufacturing and Product Development

Marketing Sales and Service

Public Services

Transportation

Career Academy Planning Schedule

Tasks	**Timing**

Form an Advisory Board (aka Steering Committee) — January-February
 Identify school, employer, higher ed., and parent
 representatives; establish a schedule of meetings
 and define members' roles and responsibilities;
 form task forces (e.g., expanding partners, technical
 curriculum, facilities, equipment)

Identify/Prepare Academy Staff — January-February
 Select Lead Teacher, other teachers (career and
 academic), school & district administrators, counselor;
 provide needed professional development

Coordinate the Academy with the High School — March-June
 Inform entire high school staff, orient counselors,
 arrange cohort scheduling, schedule academy classes,
 coordinate with union leaders

Develop Curriculum (especially for grade 10) — March-August
 Have the teachers lead, draw on employers for technical
 input, examine related state standards, conduct Internet search,
 visit other academies, develop integrated curriculum

Recruit and Select Students — March-May
 Distribute information to students, accept and screen
 applications, hold interviews and parent meetings, identify
 and schedule students, plan summer activity

Prepare Facilities and Equipment — April-August
 Adapt a classroom as "home base," prepare necessary
 space, obtain and install necessary equipment

Plan Motivational Activities — June-August
 Identify activities that will make the academy appeal,
 types of student monitoring and rewards to be used

Plan Speaker and Field Trip Program — July-August
 Explore what companies will participate, topics
 of most interest, schedule for the year; develop
 a calendar of events for these activities.

Once the stakeholders to be affected by an academy or pathway have been involved and the industry or career field identified, a more precise set of planning tasks can be undertaken. It usually takes from eight months to a year to effectively plan an academy from this point. The set of planning tasks and schedule on the previous page provide guidance for this process and the time frame in which steps need to be undertaken to start an academy in the fall. It should be elaborated and varied to fit individual circumstances.

One of the best aids in the planning process is to visit successful operating academies. Each of these tasks has many details to consider and discussions with those who have gone through this process can be immensely useful. There are directories in various places to locate such academies. Membership agencies (NAF, NCAC), states, and districts with career academies each have their own directories. CCASN maintains national and California directories (http://casn.berkeley.edu/directories.php) of academies on its website. It also has nine brief (6-8 minutes) videos of well-run academies there, plus a 12-minute overview (http://casn.berkeley.edu/video.php) of these.

Related costs, sources of support

Career academies do require additional work, and therefore entail additional expense. The biggest expense comes from the time needed to coordinate the various elements of the program that go beyond normal high school functioning: for the team of teachers to meet regularly, develop integrated curriculum, coordinate student support, coordinate employer involvement and the program elements they're involved in, and organize links to colleges.

These costs can be covered by reallocating existing funds, securing additional funds, or a combination of the two. The lead teacher(s) need to be provided release time, at least one teaching period/day, or a stipend for additional time outside the regular schedule. A high school administrator can help. Employers that support an academy can

often help with coordination of the speaker, field trip, mentor and internship programs, by assigning a liaison to the academy. They may bring other resources that can support the cost of the academy also, such as equipment, materials, and curricular expertise. Sometimes an intermediary can play an important role, such as a chamber of commerce or other education-business alliance.

Many high schools have funding outside their mainstream support, such as from Title I for at-risk students, vocational education, and staff training. Among these are the federal Carl Perkins Act, state CTE support, technology training or other staff development, and district initiatives. Often some part of these may be used to help support an academy. There are also sometimes state and/or federal grant initiatives that can be sought for academies. And there are private foundations interested in educational improvement, sometimes applicable to career academies and pathways. A list of possible sources of such funding is included in CCASN's Getting Connected: A Resource Guide for Career Academies. The steering committee can often play an important role in seeking outside support from local businesses and community organizations as well.

Chapter IV

Who needs to do what?

There are many stakeholders involved in establishing a successful career academy or pathway. A stakeholder is anyone with an interest in the success of the academy. Among the central ones who need to play a role are the administrators at the district and high school level, the academy teachers, and the partner employers and higher education representatives. What follows is a summary of each and what they need to do.

Board of Education. The Board should know of the developing academy and be in support.   There will be a number of necessary changes in the way the high school functions and implications regarding the directions the school is taking. Questions may be raised in the community. If Board members are informed and knowledgeable they can be supportive of these changes and able to respond to any concerns raised. The Board can also set policies that will support student success, such as related to scheduling, facilities, and post-secondary links.

District Superintendent. The superintendent is the CEO of the educational "company" in which the academy is housed. As such, he or she can play a helpful role by making initial contact with high-level representatives of the employers and colleges the academy would like involved. Such initial contacts are most successful if they are "CEO to CEO" rather than through teachers. Someone who can make commitments and send the message down the line that this is something the company is behind is more effective than requests from below. The superintendent can also play a constructive role by giving strong public support to the academy and the principles it fosters. While he or she rarely has time to follow up on all the details or be a member of the Steering Committee, another district administrator can take on this role.

High school principal. The high school principal needs to be the "project leader," the administrator who provides the variety of supports an academy needs. She or he can

be a spokesperson to the entire staff; encourage support from other administrators, as well as counselors and teachers; commit funding, equipment, and materials; oversee adaptations of classroom space; help remove impediments and resolve problems; and in general ensure that the academy has a chance to succeed.

Other administrators. Usually the principal identifies a vice principal or other administrator to handle the day-to-day matters related to implementing an academy or pathway. This person can join the academy teachers in relevant meetings; attend Steering Committee meetings when the principal can't; make sure adequate supplies are provided; help in coordinating the involvement of those from outside the school; ensure that scheduling is done properly, including cohort scheduling for students and a common prep period for teachers; and make clear to the academy teachers that the school administration is behind their efforts.

Lead teacher(s). Usually one or two teachers are identified to be the lead(s) or coordinator(s) for the academy. This gives them the responsibility for organizing meetings of the staff; orienting new teachers; coordinating the roles other teachers will play; overseeing curriculum development; helping to manage contacts outside the school; overseeing the budget; helping with student recruitment and scheduling; sitting on the Steering Committee; serving as liaison to the school administration; and being the chief trouble shooters. While an academy can't be successful without support from all the positions discussed here, the lead teacher is the single most important actor in the academy drama, which explains their need for some release time for this work.

Other teachers. An academy requires teachers across several academic subjects (usually English and social studies, often science, and occasionally math) and a career field to work together as a team, taking responsibility for a cohort of students. They need to meet regularly to plan cross-curricular projects, discuss problem students, plan special activities, and provide one another with support. Usually each teacher also takes on responsibility for certain activities beyond their teaching. Examples:

Student recruitment and selection

Coordination of the speaker/ field trip/ mentor/ internship program

Parent contacts

Student monitoring, rewards

Special activities (e.g., social events, graduation ceremony, summer events)

Counselors. Counselors help in handling students' academic and personal problems, advising them about post-graduate options, and helping seniors apply for college and/or work. They can hold meetings with students and their parents to help in such planning. Counselors are also usually responsible for scheduling students into their classes, and have a critical role to play in this respect. It is impossible to have an academy unless students are grouped together in their classes, and these classes are restricted to academy students. As simple as this sounds, it is the most frequent problem in establishing effective academies. This is partly because it isn't easy to do, and partly because too often counselors are not part of the academy team and don't understand the essential role they play. CCASN has developed a host of materials to help with this process, available at http://casn.berkeley.edu/master_schedule_guide.php?r=412&c=28

Employers. While all the above roles are essential and require new forms of behavior, it is where employers and others outside the high school community become involved that academies cause the biggest change in high schools. Employers play a number of essential roles:

As members of the Steering Committee

As speakers, teaching sophomores about their company, jobs, and training

As hosts of field trips, and perhaps job shadowing, usually for sophomores

As volunteer mentors, usually for juniors

As managers of internships, usually summers after the junior year, or for seniors

In addition, employers can help develop the career field curriculum, showing teachers current technology and what their employees need to know; provide "externships" for

teachers, summer positions that let them learn about the field; host special events such as Steering Committee meetings, social events, and graduation ceremonies; recruit other companies; provide equipment and materials; and lend their credibility to the academy. Often an involved employer will identify one employee to be the liaison to the academy.

Community representatives. Often others from the community, as well as employers, can support the academy, e.g.: public officials (mayors and other city officials, employees of federal and state government agencies); organizations with relevant missions (Chambers of Commerce, service clubs); quasi-public businesses (power/ phone/ water/ waste companies); and organizations of retirees. Sometimes leading citizens who don't fall into any of these categories get interested and lend their energy, resources and contacts as well.

Higher education representatives. Successful academies need ties to local two- and four-year colleges. This lets them develop their career-related curriculum to fit with post-secondary programs, and often to offer courses for juniors and seniors that grant credit at the college as well as the high school (usually called dual enrollment). Such ties also provide speakers to talk to academy students about post-secondary opportunities, and for students to tour college campuses and learn of their entrance requirements and application procedures. College representatives belong on the Steering Committee. A guide to developing dual enrollment courses is available in the CCASN Resources section of its website at http://casn.berkeley.edu/resources.php?r=279&c=1

Parents. Parents are usually more involved in a career academy or pathway than in ordinary high school structures. They need to be involved in the student's decision to apply for the academy, attending an orientation and declaring their support. They need to be available when problems occur, discussing these with academy teachers and their son or daughter, and agreeing on a course of action they will monitor along with the teachers. They are also often involved in relevant academy activities, serving as chaperones on field trips, organizers of social events, and attendees at reward and graduation ceremonies. Often one or two parents sit on the Steering Committee.

Students. Students, of course, are at the center of an academy or pathway. They should be canvassed before the career field is selected to determine their interests. They often form an academy student government to help in its functioning. Juniors and seniors can help in the recruitment for their academy and serve as buddies to new students. Successful graduates can come back and provide inspiration to younger students who follow. Often one or two students sit on the Steering Committee to be sure their concerns and viewpoints are represented.

Chapter V

How can you measure progress?

Mention program evaluation and a lot of people's eyes glaze over. Who wants to deal with questionnaires, student records, columns of data, and statistical analyses? Everybody knows you can lie with statistics anyway. If the teachers and students are happy, if they're coming to school regularly and seem engaged, what more do you need to know?

In a simpler world that attitude might fly. In today's schools, given their reputation for doing more poorly than schools in other countries, the high dropout rates of many high schools, and the often-poor quality of graduates (at least in the view of many colleges and employers), numbers are important. They're especially important for an approach that is new and claiming to improve student performance.

But evaluation need not be hopelessly complex and onerous. The simple theory behind high school reform in general and career academies in particular is that if you change to a new approach, and implement it well, student performance will improve. So what do you need to measure? Whether you've implemented the academy well, and whether student performance is improving.

These two questions are fundamental to assessing your progress. And it's important to focus on both from the start. You can't measure student progress if you don't have a baseline against which to measure it. That baseline is best determined before you begin to implement the academy. And you can't expect success if you don't gauge how well the academy is implemented. That also needs to happen from the start.

These two forms of evaluation are sometimes called "process" and "outcome." Another way of stating them is as "means" and "ends." Implementing an academy is a

process. Improved student performance is the hoped-for outcome. The first is a means to the second. While it is important to assess both, the emphasis changes over time. Initially the most important matter is high quality implementation. Over time the focus becomes whether this leads to improved student performance.

How do you assess how well you're implementing the academy? One method is through a guide that has been developed for this purpose, called the Self-Assessment Guide for College and Career Academies (all of CCASN's guides are available free in the Resources section of its website, at http://casn.berkeley.edu/resources.php). This guide lists the key elements under each of the three defining structures of an academy (small learning community; college prep curriculum with a career theme; and partnerships with employers, community, and postsecondary education). A scoring guide accompanies each element, indicating what should be in place. Each can be rated along a scale. Thus teachers can go through this guide and determine where their academy is strong or weak. This can lead to a plan for improving the weak aspects.

There are several other ways to assess how well your academy is implemented also. Probably most evident, for California Partnership Academies, is the annual report due each October on the previous year's performance. This is framed around the requirements of the State Education Code as it applies to CPAs. It can be found on the CDE website devoted to academies, www.cde.ca.gov/ci/gs/hs/cpagen.asp. The National Career Academy Coalition (NCAC) also has a rubric designed to assess academy implementation against the elements of the Career Academy National Standards of Practice (http://www.ncacinc.com/). More recently, ConnectEd CA has developed a set of criteria and rubrics for assessing and certifying Linked Learning pathways (www.connectedcalifornia.org).

How about student data? What should you collect, and how should you analyze it? At the back of the above-mentioned CCASN *Self-Assessment Guide* is a section on *Analyzing Student Data*. This suggests three types of student data to collect:

Demographics

Academy experience measures

Student outcomes

The first of these lets you assess the student makeup of the academy, and whether it reflects the profile of the host high school. The evidence suggests that academies do best when they reflect this profile, rather than focusing exclusively on students at one end of the spectrum. The second category lets you assess whether academy classes are restricted to academy students, and whether academy students are taking the full complement of academy courses. Experience suggests that academies do better when they meet these goals. These are both measures of implementation available through use of student data.

The third category pertains to student outcomes, or using student data to measure whether the academy has had an impact on student performance. Suggested indicators offered in the CASN *Self-Assessment Guide* include: attendance, retention in school, credits earned toward graduation, grade point averages, standardized test scores, on-time graduation rates, and college admission. This is followed by a section that suggests ways such student outcome data can be analyzed. Three suggestions are offered:

Compiling snapshots over time, for an individual academy. This indicates whether the *program* is improving from year-to-year.

Comparing year-to-year changes for individual students or cohorts of students. This indicates whether *students* in the academy are improving over time.

Relating academy program characteristics to student performance. This indicates whether variations in program implementation are associated with improvement.

Fuller explanations of each of these are offered in the *Self-Assessment Guide*, as well as additional categories of data that might be collected.

Chapter VI

Where can you get help?

The short answer to this question is many places. The issue is sorting through all the information to find what you need. Since this *Planning Guide* was developed by CCASN, we'll start with what CCASN has to offer. This section then offers a list of the other state and national organizations that support career academies, a brief summary of what materials they have, and a list of the annual conferences each sponsors. *All* are linked to the CCASN website http://casn.berkeley.edu/ if you want more information.

The best place to review CCASN's materials is at: http://casn.berkeley.edu/ On the home page you will see several options you can click on:

> Teaching and learning—a huge searchable curriculum database, both academic and career-related, derived from a broad national search, with descriptions at several levels of detail, and a variety of related materials and services: http://casn.berkeley.edu/
>
> Resources—a host of materials, from CCASN's guides, articles, and presentations, to a toolkit with over 100 templates and forms, the ten videos, and sketches of and links to other support organizations: http://casn.berkeley.edu/
>
> The Master Schedule Guide, hot off the presses in 2014, with many related materials: http://casn.berkeley.edu/master_schedule_guide.php?r=412&c=28
>
> The academy directories, with national and California versions, searchable by theme and location, with contact information: http://casn.berkeley.edu/
>
> A section describing the various services CCASN offers to career academies: http://casn.berkeley.edu/services.php?r=287
>
> About CASN—an overview of the organization, its staff, and its advisory board: http://casn.berkeley.edu/aboutcasn.php

A section for California Partnership Academies, the unofficial CA Department of Education website in this regard, tailored to the academies in California: http://casn.berkeley.edu/cpa.php

Most of this is self-explanatory. The best way to make use of all these this is to spend some time surfing around the site, and then go to the section(s) that serve your needs and answer your questions. Aside from the curricular materials in that database that come from proprietary sources, everything on the site is free for downloading. There is also an ask-CCASN feature that allows you to email questions.

Here's a list of some of our most popular guides (all in the resources section of our website at: http://casn.berkeley.edu/resources.php):

Career Academies: A Proven Strategy to Prepare High School Students for College and Careers (their history, growth, a summary of research findings)

Self-Assessment Guide for College and Career Academies

*Course Sequence*s for *Career Academies*

Partnership Guide for Career Academies

Web-Based Curriculum Resources for Career Academies

Mentor Handbook for Career Academies

Internship Handbook for Career Academies

The California Department of Education (CDE) also offers many resources for the California Partnership Academies, at http://www.cde.ca.gov/ci/gs/hs/cpagen.asp. This CDE-based CPA website contains the State Education Code as it impacts CPAs, a program overview, a state directory of CPAs, grant and funding information, forms, upcoming events, a FAQ section, and contact information.

There are several other organizations that have a wealth of resources and materials to support career academies. The National Academy Foundation

(http://naf.org/) is a business-based agency, based in New York City, that has been supporting academies since the mid-1980s. It is a membership organization with over 500 academies, in some 40 states. These academies operate in five career fields: finance, hospitality & tourism, information technology, engineering, and health sciences. It provides professional development workshops and conferences for its many members.

The National Career Academy Coalition (http://www.ncacinc.com/) is based in Nashville, TN, an all-academy district. In existence also since the 1980s, NCAC developed the rubrics that allow it to conduct assessments of the degree to which an academy is meeting the National Standards of Practice (NSOP). It holds a national conference each year open to all academies, and has an active board.

ConnectEd California (http://www.connectedcalifornia.org/), based in Berkeley, CA has been the central pillar of support for the Linked Learning initiative in California and the many pathways developed through this initiative. These are four-year programs, many of them career academies, which each district is implementing throughout the district, in effect demonstrating how this approach can serve as a central reform model for high schools in general, not just subsets of students. It provides extensive materials and professional support to the nine districts that have received grants from the James Irvine Foundation, and works in association with the Linked Learning Alliance (http://linkedlearning.org/) based in Sacramento.

The following two pages provide an overview of most of these and many other organizations with an interest in and resources useful for career academies. Sketches of each and URLs for each are included. These are also included in the Resources section of the CCASN website, with live links (http://casn.berkeley.edu/resources.php?r=242). As this will illustrate, there is a great deal of interest in career academies in the country, and many resources available to help them succeed.

Career Academy Support Organizations

Buck Institute for Education (BIE), Novato, CA (www.bie.org). Focuses on making schools and classrooms more effective through the use of problem and project based learning, providing curriculum and training materials, professional development, and research.

The College and Career Academy Support Network (CCASN) at UC Berkeley (http://casn.berkeley.edu/) provides a series of free guides and handbooks for various components of the academy approach, a national directory of academies, a tool kit of materials useful in implementing academies, professional development to support teachers/ administrators/ counselors implementing academies, and research related to this approach.

Center for the Social Organization of Schools (CSOS), Johns Hopkins University, Baltimore, MD **(http://www.jhucsos.com/).** Works with over 100 high schools in its Talent Development High Schools network, mostly in the east and central parts of the country, built on a ninth grade program designed to raise the performance of at-risk students leading to grade 10-12 career academies.

ConnectEd California, the California Center for College and Career, Berkeley, CA (www.connectedcalifornia.org). Supporter of the Linked Learning initiative, it offers extensive curriculum support, coaching, and professional assistance to the nine districts involved in this initiative, and increasingly to others in California and elsewhere.

Ford Partnership for Advanced Studies (Ford PAS), Newton, MA & Dearborn, MI (www.fordpas.org). FordPAS offers an inquiry- and project-based interdisciplinary curriculum program that provides students with content knowledge and skills in such fields as business, economics, engineering, and technology, linking learning in traditional academic subjects with post-secondary education and the workplace.

Institute on Education and the Economy (IEE), Teachers College, Columbia University, New York (www.tc.columbia.edu). IEE is an interdisciplinary policy research center that focuses on the interaction between education and the economy, including research, technical assistance, and evaluation, particularly related to high school/ community college connections and dual enrollment programs.

MDRC, New York City and Oakland, CA (http://www.mdrc.org/). A series of reports on their 15-year experimentally designed national longitudinal evaluation of career academies, which showed substantial employment gains eight years after high school graduation for academy graduates compared with their non-academy control groups.

National Academy Foundation (NAF), New York City and Berkeley, CA (http://naf.org/). Works with over 500 academies in 40 states, sponsors a conference each July for all NAF affiliates and smaller versions at other times for academy leads. It offers

technical curriculum/ lesson plans and support in five career fields—finance, engineering, hospitality & tourism, information technology, and health.

National Career Academy Coalition (NCAC), Nashville, TN (http://www.ncacinc.com/). A membership organization, sponsors a national career academy conference each fall, conducts certifications of academies using the Career Academy National Standards of Practice and its rubric built around these.

National Center on Education and the Economy (NCEE), Washington, D.C. (www.ncee.org). Focused on standards and programs that help to meet them, NCEE conducts research, analysis and advocacy while providing training, professional development, technical assistance, and materials.

National Educator Program (NEP), Denver, CO (www.neponline.org). NEP focuses on leadership and sustainable school improvement to raise student achievement, particularly around career academies, high school redesign, and small learning communities, offering professional development workshops and conferences.

National Partnership for Careers in Law, Public Safety, Corrections and Security, Austin, TX (http://www.ncn-npcpss.com/). With regional centers and partner agencies around the country this network supports the development and certification of career academies in these fields with various materials and workshops.

Education Northwest (formerly Northwest Regional Education Lab), Portland, OR (http://educationnorthwest.org/). Focused nationally but especially on northwestern states, Education Northwest provides an assortment of materials and services related to issues such as low performing schools, small learning communities, parent involvement in schools, math and science programs (especially for girls), and literacy coaching.

Southern Regional Education Board (SREB), Atlanta, GA (http://www.sreb.org/). Works with over 1,000 high schools in 16 states in its *High Schools that Work* network, mostly in the southeast, many of which have academies. Sponsors a large conference in July each year, plus a series of smaller regional and state workshops. Works in grades P-20, with a variety of reports and materials to support its 12 "Challenge to Lead" goals.

Stanford Center for Opportunity Policy in Education (SCOPE), Stanford, CA (https://edpolicy.stanford.edu/). This research-based organization is designed to help secondary schools and districts support equity and intellectual rigor, and all students to master the knowledge and skills needed for success in college, career and citizenship.

WestEd, San Francisco, CA (www.wested.org). Nationally focused but especially on California and other western states, WestEd provides an assortment of materials and services related to educational policy issues such as literacy/ reading, English language learners, charter schools, youth development, assessment and evaluation, small learning communities, and community building.

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