



## THE CONNECTICUT POLICY INSTITUTE

*A non-partisan, not-for-profit research organization dedicated to developing responsible, research-driven public policy for Connecticut.*

# Building Connecticut's Workforce -Integrating Career Education with Employer Needs-

*January 10, 2013*



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## Introduction

Connecticut has a serious employment problem. Unemployment in Connecticut as of December 2012 stands at approximately 8.8%-- a full point higher than the national average (7.8%).<sup>1</sup> Connecticut has fewer jobs today than it did in 1990.<sup>2</sup> Over the last two years, the state has recovered only 9% of jobs lost during the recent recession.<sup>3</sup> By comparison, the country as a whole has regained more than 35% of jobs lost during the same period.<sup>4</sup> The Connecticut Center for Economic Analysis at the University of Connecticut warns that the state could experience little or no net job growth over the next eighteen months.<sup>5</sup>

How did this happen? Connecticut's long history as a manufacturing center was followed by a decline as companies merged and jobs were lost overseas and to lower-cost areas within the United States. Then, for many years, the state's banking and insurance sectors boomed, which provided white-collar employment opportunities that to some extent masked the decline in manufacturing and traditional "blue collar" jobs. Those sectors were decimated by the financial crisis and by mergers before and after.

Yet even as the number of jobless Connecticut residents soars to new heights, interviews conducted by the Connecticut Policy Institute (CPI) reveal that many employers in the state have unfilled job openings.<sup>6</sup> Employers have been unable to fill open positions because too few job applicants possess the requisite blend of "soft" skills (*e.g.* reliability, interpersonal skills, communications skills, good work habits) and "hard" skills (*e.g.* specific job-related skills, as well as college-level literacy and numeracy). At the same time, skilled graduates of Connecticut's technical high schools and community colleges report that the Connecticut employment landscape is very confusing. This situation is particularly disconcerting since a highly educated workforce has been a traditional strength of Connecticut and the state currently devotes more than \$650 million annually to workforce training through technical high schools, community colleges, and Department of Labor job training programs.<sup>7</sup>

There is no single "silver bullet" policy for returning Connecticut to a path to prosperity – it will require prudent infrastructure investments, supportive fiscal policy, and a supportive regulatory

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<sup>1</sup> U.S. Bureau of Labor Statistics. Graph assembled by Google.com:  
[http://www.google.com/publicdata/explore?ds=z1ebjgk2654c1\\_&met\\_y=unemployment\\_rate&idim=state:ST090000&fdim\\_y=seasonality:S&dl=en&hl=en&q=connecticut+unemployment+rate](http://www.google.com/publicdata/explore?ds=z1ebjgk2654c1_&met_y=unemployment_rate&idim=state:ST090000&fdim_y=seasonality:S&dl=en&hl=en&q=connecticut+unemployment+rate)

<sup>2</sup> Connecticut Labor Market Information: <http://www1.ctdol.state.ct.us/lmi/ctnonfarmemployment.asp>.

<sup>3</sup> U.S. Bureau of Labor Statistics. Graph assembled by Google.com:  
[http://www.google.com/publicdata/explore?ds=z1ebjgk2654c1\\_&met\\_y=unemployment\\_rate&idim=state:ST090000&fdim\\_y=seasonality:S&dl=en&hl=en&q=connecticut+unemployment+rate#lctype=1&strail=false&bcs=d&nslm=h&met\\_y=unemployed&fdim\\_y=seasonality:S&scale\\_y=lin&ind\\_y=false&rdim=country&idim=state:ST090000&ifdim=country&hl=en\\_US&dl=en&ind=false](http://www.google.com/publicdata/explore?ds=z1ebjgk2654c1_&met_y=unemployment_rate&idim=state:ST090000&fdim_y=seasonality:S&dl=en&hl=en&q=connecticut+unemployment+rate#lctype=1&strail=false&bcs=d&nslm=h&met_y=unemployed&fdim_y=seasonality:S&scale_y=lin&ind_y=false&rdim=country&idim=state:ST090000&ifdim=country&hl=en_US&dl=en&ind=false)

<sup>4</sup> Center on Budget Policies and Priorities: <http://www.cbpp.org/cms/index.cfm?fa=view&id=3252>

<sup>5</sup> Connecticut Mirror, Aug. 29, 2012, "Study questions if Connecticut emerged from recession":  
<http://www.ctmirror.org/story/17334/recession-hit-connecticut-much-harder-early-reports-showed>

<sup>6</sup> For a national and regional examination of this problem, see <http://www.bls.gov/news.release/pdf/jolts.pdf>

<sup>7</sup> Vocational/technical high schools budget is \$160 million; Community college budget is \$407M; Department of Labor retraining budget is approximately \$100 million. See  
[http://www.ct.gov/opm/lib/opm/budget/2012\\_2013\\_biennial\\_budget/regulation\\_and\\_protection.pdf](http://www.ct.gov/opm/lib/opm/budget/2012_2013_biennial_budget/regulation_and_protection.pdf)

environment, among other reforms.<sup>8</sup> But one especially critical priority for Connecticut must be to better link employers—and their current and expected job needs—with the technical high schools and community colleges that train and retrain the people who can fill those jobs.

In an effort to reduce unemployment and underemployment in Connecticut, this white paper recommends a number of ways to strengthen linkages among Connecticut’s public education administration, technical high schools, community colleges, and employers.<sup>9</sup> These recommendations are based on extensive interviews, data analysis (where data were available), and examination of best practices across the United States and the world.<sup>10</sup> School leaders, administrators, government officials, teachers, and employers from Connecticut and elsewhere all shared with us their opinions about the current quality of vocational education in the state, as well as their views on what needs to be done to improve upon the status quo.<sup>11</sup>

We do not propose large structural reorganizations to the vocational education system. Our focus is on low-cost, high-impact improvements that would more than pay for themselves in increased tax revenues from job creation, and for which the upfront investment could easily be funded through efficiencies, employer contributions, and selective reallocation.<sup>12</sup>

We have identified three important problems, with recommendations structured around them:

1. There is inadequate coordination among the state’s technical high schools, community colleges, and employers. These inadequacies lead to unfilled job vacancies, student dropouts, and poor use of state resources.
2. After a long period of underinvesting, Connecticut’s technical high schools and community colleges recently have overinvested in facilities and major capital projects and underinvested in operating budgets, planning and analysis, student advising, and faculty development.
3. The technical high schools and community colleges too frequently choose to teach skills based on teachers’ existing competencies rather than employers’ current and future needs.<sup>13</sup> Due to a combination of the resulting skills mismatch and the lack of a statewide, high-quality job application database, employers struggle to find students with requisite skills and qualified students struggle to find attractive job opportunities.

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<sup>8</sup> See Connecticut Policy Institute, “Connecticut Job Creation: Separating Policy from Politics,” [http://www.ctpolicyinstitute.org/content/CPI\\_Jobs\\_Creation.pdf](http://www.ctpolicyinstitute.org/content/CPI_Jobs_Creation.pdf).

<sup>9</sup> Appendices 1 and 2 respectively provide a list of the technical high schools and the community colleges.

<sup>10</sup> For a complementary study of vocational education around the world, see McKinsey’s December 2012 “Education to Employment: Designing a System that Works”:

[http://mckinseysociety.com/downloads/reports/Education/Education-to-Employment\\_FINAL.pdf](http://mckinseysociety.com/downloads/reports/Education/Education-to-Employment_FINAL.pdf)

<sup>11</sup> This paper recommends making greater use of Connecticut’s five Regional Employment Boards. These Boards act as representatives of regional/local employers. Although Boards primarily work to promote job placement, Boards could also allow employers to communicate with schools as a single unified voice rather than a blend of contradictory individual voices. See more at <http://www.ctdol.state.ct.us/rwdb/dir-rwdb.htm>

<sup>12</sup> See Appendix 5

<sup>13</sup> Although the precise magnitude of this problem is difficult to define, interviewees consistently expressed the perception that some teachers in the career training system teach outmoded skills to students who later have difficulty finding employment as a result of their outmoded skill set.

We have had the good fortune to interview many dedicated people who work hard to bridge the gaps between the various parts of the state's vocational education system. If Connecticut's government and employers can make use of the great ideas we heard from around the state, the efficiency and productivity of Connecticut's technical high schools, community colleges and job training programs will increase significantly. The enthusiasm we encountered for addressing this topic indicates this is an auspicious time to undertake the potential improvements outlined below.

## **Summary of Recommendations**

1. **There is inadequate systematic coordination between the state's technical high schools, community colleges, and employers.**
  - a. The General Assembly should require community colleges and technical high schools to adopt "articulation agreements" outlining "grade 9-14" programs that provide students with four-to-six year career development programs that train students for employment in high-growth statewide industries. Schools should coordinate with their local Regional Employment Boards in order to identify potential industries with which to partner.
  - b. The General Assembly should coordinate funding of community colleges and technical high schools to require better coordination between the two. In addition, a portion of school funding should be based on graduation rates (rather than enrollment) and should provide schools incentives to adopt new technologies and experiment with "grade 9-14" programs or similar structural innovations.
  - c. Technical high schools and community colleges should hire more advisors and expand online learning modules to help reduce the dropout rate and enable students to chart a path to a full-time, well-paying job.
  - d. The technical high schools Superintendent, community college President, and the 5 Regional Employment Boards should develop a standardized statewide electronic "common application" for graduates applying to state employers and to state community colleges.
  - e. Upon its upcoming opening, Wright Tech should pair with Norwalk Community College to spearhead the development of a high quality "grade 9-14" program.
  
2. **After a long period of underinvestment, Connecticut has overinvested in facilities and major capital projects and underinvested in operating budgets, planning, student advising, and faculty development.**
  - a. The technical high schools and community colleges need better capabilities in planning and analysis, strategy review, best practices collection, data collection, and data analysis. Leading Connecticut companies and/or non-profits should be asked to provide pro bono staffing to help schools develop such capacities.
  - b. Supported by more robust analysis staff, the community college and technical high school systems should identify ways to make use of the excess capacity of their facilities.
  - c. The General Assembly and the Board of Education should include in all future facilities and major capital project appropriations adequate funding during the first

- few years after project completion for planning to ensure facilities are planned and managed effectively and used at capacity.
- d. The technical high schools and community colleges should develop a joint marketing/public relations/communications campaign to help Connecticut students, parents, and employers understand the value of a quality vocational education, the quality of existing facilities and programs, and the employment opportunities for graduates.
3. **There is too little overlap between the skills employers need and the skills technical high schools and community colleges teach.**
- a. Employers must participate more actively in curriculum development councils at both the technical high school and community college level. The General Assembly should facilitate this by requiring that Regional Employment Boards appoint a certain number of employer representatives to sit on each curricular committee.
  - b. A small part of the technical high school and community college operating budget should be allocated to support more extensive teacher retraining and early retirement. Employers can contribute to and help fund this effort by providing externships for full-time teachers and offering their employees as adjunct instructors.
  - c. The technical high schools and community colleges each should develop a social media platform (e.g., a Facebook page) to provide opportunities for students and employers to discuss skills employers need, skills students are learning, and what needs to be done to merge the two.
  - d. Expansion of Charter Oak, the state’s online college, can provide a cost-effective bridge between the technical high schools and community colleges, as well as a way to source new online learning tools that can help develop faculty, manage remedial learning, and upgrade employees’ skills.

## **Rationale and Details of Policy Recommendations**

### **1. There is inadequate systematic coordination between the state’s technical high schools, community colleges, and employers.**

#### *a. Articulation Agreements for “Grade 9-14” Programs*

One common feature of the world’s most effective vocational education systems is that they integrate high school and tertiary education.<sup>14</sup> Germany, Switzerland, and Austria provide excellent examples.<sup>15</sup> Closer to home, New York City and Chicago each offer students a

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<sup>14</sup> Harvard Graduate School of Education, “Pathways to Prosperity” Report, p. 5, [http://www.gse.harvard.edu/news\\_events/features/2011/Pathways\\_to\\_Prosperty\\_Feb2011.pdf](http://www.gse.harvard.edu/news_events/features/2011/Pathways_to_Prosperty_Feb2011.pdf)

<sup>15</sup> *Id.*

combined six-year high school and college curriculum tailored for a job in a growing technology industry.<sup>16</sup> Connecticut must follow suit.

Coordination between educational institutions with different governing boards is formalized through “articulation agreements” – binding agreements between two or more separate institutions specifying joint academic programs and credits that could transfer from one institution to another. With a quality system-wide articulation agreement in hand, Connecticut’s high schools and community colleges can design effective “job track” programs focused on preparing students for profitable careers. “Grade 9-14” programs could provide students with the advanced manufacturing, health care, or software development skills needed to fill often unfilled, high paying manufacturing jobs in Connecticut.

Some Connecticut high schools and community colleges already have articulation agreements, but there is no mechanism to promote them systematically or ensure their rigor. In several other states, articulation agreements between educational institutions are mandated legislatively. Connecticut’s General Assembly should follow suit and force a system-wide articulation agreement between the 12 community

### **TRIED AND TRUE: P-Tech, New York City**

P-Tech provides students with a six-year high school diploma and associate’s degree program in computer information systems or electromechanical engineering technology, following a curriculum developed in consultation with I.B.M. Students study traditional subjects like math and English alongside business-centric courses on networking, critical thinking and presentation skills. P-Tech and I.B.M. aim to prepare graduates for entry-level jobs paying around \$40,000 a year as software specialists who answer questions from I.B.M.’s business customers or “deskside support” workers who answer calls from PC users, with opportunities for advancement. Many states and cities, including Chicago, Massachusetts, and New York are replicating the P-Tech model.

colleges and the technical high schools. While each school should develop the details of its own agreement, the legislature should include certain requirements guaranteeing the agreements’ rigor. For instance, it could specify that the agreements must include integrated curricula and internships, cross-enrollment and credit transfer policies, and joint career advising to allow students to take maximum advantage of these programs. There should also be safeguards to ensure that students demonstrate competence in the subjects for which credit is granted.

In order to maximize the chances of pairing the right schools with the right employers, schools should work with Connecticut’s Regional Employment Boards while planning their “grade 9-14” or apprenticeship programs. These boards, including Capital Workforce Partners, represent regional coalitions of employers looking to hire Connecticut residents for well-paid, stable employment.<sup>17</sup> Working through Regional Employment Boards has the advantage of providing schools with perspectives from a range of employers, rather than only one employer. This is particularly important since effective “grade 9-14” programs make extensive use of internship

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<sup>16</sup> New York Times, Oct. 21, 2012, “At Technology High School, Goal Isn’t to Finish in 4 Years”: [http://www.nytimes.com/2012/10/22/nyregion/pathways-in-technology-early-college-high-school-takes-a-new-approach-to-vocational-education.html?pagewanted=1&\\_r=2&](http://www.nytimes.com/2012/10/22/nyregion/pathways-in-technology-early-college-high-school-takes-a-new-approach-to-vocational-education.html?pagewanted=1&_r=2&)

<sup>17</sup> See Capital Workforce Partner’s website: <http://www.capitalworkforce.org/>

and apprenticeship programs with employers.<sup>18</sup> **Massachusetts has experienced a great deal of success pairing employer interests with school curricula by relying upon Regional Employment Boards.**<sup>19</sup>

The Volkswagen plant in Chattanooga, Tennessee provides a powerful model of the sort of professional apprenticeship program that could work well in Connecticut. Volkswagen accepts students from a local community college. Alongside regular classroom training, Volkswagen brings in students to learn the specific equipment, skills, and routines students will need to hold down a job at the German company's local plant. Students who do not work for Volkswagen after completing their studies nonetheless will have learned useful hard and soft skills that will help them find other jobs.<sup>20</sup>

*b & c. Funding for Results: Graduation Rates, Online Learning, and Student Advising*

In addition to insufficient “grade 9-14” offerings, interviewees consistently cited two key shortcomings with the current curricular programs at technical high schools and community colleges: 1) students often move aimlessly from course to course rather than strategically acquiring the requisite skills for careers in high demand; and 2) the high cost of remedial education diverts resources and attention away from vocational training. **These contribute to the sobering fact, reported in a 2011 state Department of Education report, that the 3-year graduation rate at community colleges in the state is only 10%, putting Connecticut 47<sup>th</sup> in the nation.**<sup>21</sup>

Both of these shortcomings are hardly surprising given that there is almost no student advising in either the technical high schools or community colleges – **one community college revealed it has fewer than one advisor per thousand students.** With so few opportunities to discuss courses, plan careers, and feel valued by their schools, it is no wonder that so many students pursue unstructured academic programs before eventually dropping out. The results produced by organizations like Single Stop USA, an anti-poverty organization that provides guidance and counseling to Community College students, shows that properly designed advising programs are highly effective at reducing drop-out rates and improving employment outcomes for graduates.<sup>22</sup>

Resources for expanded advising programs could be made available by reducing the expense for community colleges' and technical high schools' remedial courses. To meet students' remedial needs, schools should make greater use of e-learning modules. Instead of forcing students to sit through semester- or year-long classes that, in some cases, cover only a small amount of material students actually struggle with, schools should invest in high quality online learning modules that allow students to cover material at the appropriate pace for their individual abilities. High quality, rigorous research by the Online Learning Institute suggests strongly that such e-learning,

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<sup>18</sup> Christian Science Monitor, Sept. 27, 2012, “The New Classroom is a Factory”:

<http://www.csmonitor.com/Business/2012/0926/The-new-classroom-is-a-factory>

<sup>19</sup> Harvard Graduate School of Education, “Pathways to Prosperity” Report, p. 27,

[http://www.gse.harvard.edu/news\\_events/features/2011/Pathways\\_to\\_Prosperty\\_Feb2011.pdf](http://www.gse.harvard.edu/news_events/features/2011/Pathways_to_Prosperty_Feb2011.pdf)

<sup>20</sup> See: <http://www.chattanoogaastate.edu/ttc/volkswagen-academy.html>

<sup>21</sup> Connecticut Mirror, March 16, 2011, “Report: Community College Graduation Rate Lags”:

<http://ctmirror.com/story/11893/grad-rates>.

<sup>22</sup> See [singlestopusa.org/program/community-colleges](http://singlestopusa.org/program/community-colleges).



paired with only an hour of in-class instruction per week, achieves similar if not better results at less cost for the school and less time for the student.<sup>23</sup>

The technical high school and community college systems should require each technical high school and community college to develop an e-learning remediation program to reduce remediation costs without sacrificing educational quality. These programs could be implemented through Charter Oak State College, the state's online college. The General Assembly should provide funding to support adequate student-advisor ratios at each school.

More generally, the General Assembly should condition appropriations in part on how well schools succeed at promoting graduation rates. **A 2011 report by the Brookings Institution found that policies tying vocational education funding to performance were powerful drivers of innovation and improvements in states including Washington, Ohio, and Indiana.**<sup>24</sup> These states' funding systems rewarded student progress through intermediate milestones (such as completion of certain courses, internships, and certificates) as well as graduation and job placement. They also rewarded collaboration with local employers and included protections for bias against harder-to-serve students.<sup>25</sup> Connecticut could base its own funding system on these states' models.

#### *d. Increasing the Efficiency of the Labor Market: Common Application*

In addition to improving curricular coordination, schools and employers must also improve the recruitment and selection process for graduates of state technical high schools and community colleges. This process currently involves two important informational shortcomings.

The first shortcoming relates to employers' difficulty in finding qualified applicants, and applicants' difficulty in finding interested employers. Employers are represented by a number of largely uncoordinated groups, including CBIA, the Business Council of Fairfield County, many state and local chambers of commerce, many technical advisory groups connected to the Technical High Schools and Community Colleges, and a range of other groups. At the same time, with a few informal exceptions, the career services office of each technical high school or community college cultivates its own employer relationships and manages its own on-campus recruitment program. As a result, graduates of training programs cannot easily apply to the full range of relevant employers. At the same time, employers are often not aware of the full pool of potentially qualified applicants.<sup>26</sup>

The second shortcoming relates to employers' difficulty in assessing the full range of skills a particular applicant possesses. In particular, we found that employers across the state expressed interest in two pieces of currently underprovided information that are not reflected clearly by academic transcripts and recommendations: 1) hard evidence of applicants' actual vocational

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<sup>23</sup> To see high quality research attesting to the educational benefits of e-learning, see: <http://oli.cmu.edu/get-to-know-oli/see-our-proven-results/>

<sup>24</sup> Richard Kazis, "Community Colleges and Regional Recovery," p. 6, [http://www.brookings.edu/~media/research/files/papers/2011/5/18%20community%20college%20kazis/0518\\_community\\_college\\_kazis.pdf](http://www.brookings.edu/~media/research/files/papers/2011/5/18%20community%20college%20kazis/0518_community_college_kazis.pdf)

<sup>26</sup> Appendix 4 lists the various sites that currently require separate applications.

abilities, and 2) evidence of applicants’ “soft skills” – work habits, dress, reliability and integrity, interpersonal skills, etc.

Our proposal for creating a common application system is a relatively simple and promising solution to this pair of problems. Setting up an effective common application system requires two steps.

First, employers and educators should come together to create a common application that assesses students’ soft and hard skills. The application should go beyond transcripts to include an e-portfolio of students’ career-relevant schoolwork (*e.g.* photos of a manufacturing students’ best work). Applicants’ soft skills can be conveyed through information like class attendance and punctuality records and potentially a short video in which the candidate gives answers to certain pre-written questions.

Like the “common application” used by most four-year colleges and universities, it could include both standard components for all employers, and employer-specific or industry-specific supplements. Employers should be given an opportunity to contribute to discussions that determine the particular skills that industry-specific common applications assess. Even with these supplements, a standard format would go a long way towards streamlining and centralizing a scattered job application market. And by requiring more extensive information in the initial application phase, a much higher percentage of candidates invited to interview with specific employers would actually receive job offers, ultimately saving both employers and schools time and money.

The common application should also be used to allow students to apply to all of Connecticut’s twelve community colleges. Currently, students must apply individually to each community college. A common app system would make it easier for students to find and apply to the program best suited to their individual needs.

### **TRIED AND TRUE: The Common Application, Inc.**

Launched in 1975, The Common Application allows college applicants to apply to any of its 488 member colleges and universities by filling out one “common” application (and, in some cases, short school-specific supplements). Since its inception with fifteen member schools, the ease and efficiency of the “common app,” as it’s customarily known, have allowed the not-for-profit Common Application to become the major college application interface.

The second step is to organize and centralize the current jumble of career and job posting websites into a single clearinghouse for employers and prospective employees. Employers should be able to search for applicants by region, school, and training background. Applicants should be able to search for employers by region, industry, and any other relevant criteria. Combining the ease and informativeness of the common application with the efficiency of a centralized website could dramatically enhance the functioning of the employment market in Connecticut. A common app/e-portfolio would work for graduates of both technical high schools and community colleges.

*e. Wright Tech High School and Norwalk Community College's "Grade 9-14" Opportunity*

The planned opening of the Wright Technical School in 2014 offers a unique opportunity to plan and operate a technical high school in close coordination with a community college (Norwalk), a four-year college (UConn-Stamford), and a high concentration of current Connecticut employers (Fairfield County). Whatever the particulars, Wright Tech and Norwalk's leadership should be charged to implement their own 9-14 program in conjunction with the local regional employment board.

**2. After a long period of underinvestment, Connecticut has overinvested in facilities and major capital projects and underinvested in operating budgets, planning, student advising, and faculty development.**

The Governor decided last year to retain the state-run technical high school system and to invest significant sums in upgrading its facilities, over a reasonably short period of time.<sup>27</sup> Connecticut has invested about \$1 billion in upgrading the technical high schools since 2009, and has committed an additional \$500 million.<sup>28</sup> However, returns from this large investment in facilities have been compromised by insufficient investment in operations and human capital development. Community colleges share similar shortcomings.

*a. Investments in Planning, Analysis, and Data*

Both the technical high school and community college systems have insufficient planning, analysis, and data collection capacity. **In fact, within the technical high school system there is no planning and analysis function at the Superintendent's level. There is not even a statistical handbook to help researchers understand performance and cost trends.** Hence, there is no way to determine the cost of bringing the system "up to snuff", including capital, deferred maintenance, amount of available capacity, etc. Not only does this create inefficiency—it also makes it harder for the system to distinguish between effective and ineffective investments and educational programs.

How could this be? A brief look at the organizational chart for the state's technical high school system administration shows that most positions pertaining to data gathering, analysis, and planning are unfilled.<sup>29</sup>

We recommend that the technical high school and community college systems improve upon existing planning and analysis capabilities at their respective Superintendent / President levels to promote coordination between schools, as well as measure and track costs, capacities, and student outcomes. The goal for each system would be a performance tracking program and database that measures expenditures, demographic characteristics, graduation rates, and job placement / retention rates for each school / program. This would allow both the technical high

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<sup>27</sup> Governor's Task Force: [http://www.governor.ct.gov/malloy/lib/malloy/CTHSS\\_Task\\_Force\\_Report\\_-\\_Final\\_1-10-2012.pdf](http://www.governor.ct.gov/malloy/lib/malloy/CTHSS_Task_Force_Report_-_Final_1-10-2012.pdf)

<sup>28</sup> Governor's Task Force, Appendix G:

[http://www.governor.ct.gov/malloy/lib/malloy/CTHSS\\_Task\\_Force\\_Report\\_-\\_Final\\_1-10-2012.pdf](http://www.governor.ct.gov/malloy/lib/malloy/CTHSS_Task_Force_Report_-_Final_1-10-2012.pdf)

<sup>29</sup> See Appendix 3

school and community college systems to devote new resources to effective programs, understand why ineffective ones are failing, scale up successful programs, and modify or close down failing programs as appropriate. It would also help with more effective capital allocation, maintenance, and use of available capacity.

Expanded planning and analysis functions could also help Connecticut regularly capture best practices from other states and around the world. With a better understanding of which programs are most successful at preparing students for employment, and which schools and employers do the best job at forging meaningful links, Connecticut would be in a far better position to fund the entire system to maximize positive impact. In general, Connecticut's workforce training system does a poor job noticing and then implementing the best practices in workforce education from other countries and U.S. states because no entity in the state is responsible for raising awareness and leading change.

Employers in the state also expressed interest in contributing to technical high schools' enhanced planning / analysis and advising capacities. Employers could sponsor 3- or 6-month internships for their own planning and analysis personnel to work in the planning offices of the Superintendent of Technical High Schools or Community College President. These employees would return to their companies having gained valuable experience. Similarly, employers' HR personnel could work as adjunct advisors at technical high schools and community colleges, helping to make the schools more effective while also prospecting for potential employees. It is understood that union issues will need to be identified and resolved.

#### *b. Identifying and Utilizing Excess Capacity*

A greater emphasis on data gathering likely would result in the identification of excess operating capacity within schools' existing facilities. We believe most technical high schools with excellent, recently upgraded facilities are generally in use only from 730am to 330pm on weekdays. Serving different groups, including continuing education for local employers and non-traditional student groups like foster children, appears to make sense, but will require careful planning.

#### *c. Smarter Facilities and Capital Projects Investment*

In the future, the General Assembly and the Board of Education should include in all facilities and major capital project appropriations operating funding for the first few years after project completion to ensure facilities are planned and managed effectively and used at capacity. Too often, Connecticut invests tens of millions of dollars in new facilities projects that run at a suboptimal level because funding is unavailable to make full use of the buildings' potential. This is not a sensible investment strategy.

#### *d. Marketing, Public Relations and Communications*

Many stakeholders bemoan the low regard Connecticut students and parents have for the state's technical high schools and community colleges. This general disfavor is inconsistent with the good job security and salary prospects of graduates from high quality vocational education

programs, such as Asnuntuck Community College’s Advanced Manufacturing program. Across the U.S., graduates of high quality vocational training schools often earn more than peers with B.A.’s.<sup>30</sup> This is just the sort of sensible, grounded-in-fact argument that Connecticut’s vocational and technical training schools should promote through a concerted marketing campaign.

A successful public relations/communications campaign must feature a variety of initiatives. First, leaders in the executive and legislative branches should make it a priority to emphasize in their communications the importance and promise of technical high school and community college vocational education. School administrators should work in concert with government officials to hold student and parent assemblies at Connecticut elementary and middle schools to highlight the benefits of high quality technical and vocational education. The school system should also invest more in internet advertising, including on Facebook. There are plenty of good arguments to be made in favor of vocational education; Connecticut’s parents and students should hear them repeatedly. State firms specializing in communications should be approached for pro bono help.

**TRIED AND TRUE: Singapore and Public Relations for Vocational Ed**

Singapore invests in advertising designed to publicize the solid earnings and social prestige of jobs offered through training programs at vocational colleges. For example, as part of the “Hands On, Minds On, Hearts On” initiative, Singapore helps students develop confidence in their skills and employability through a society-wide advertising campaign as well as one-on-one mentoring sessions with students emphasizing students’ heightened career prospects from attending vocational colleges. Researchers credit Singapore’s advertising outreach with increasing social esteem for vocational college graduates.

One potential way to promote the public image of technical high schools is to reconsider rebranding technical high schools as “career academies.” This term is not new—many states have reformed their technical and vocational high schools into career academies (which also require meaningful curricular and administrative reforms like those proposed in this white paper). Even if Connecticut’s technical high school adopted only portions of the full career academy model, the career academy title would serve two goals. First, it would emphasize technical high schools’ focus on preparing students for fulfilling careers. Second, it would allow the vocational education system to earn the respect and positive attention it deserves. High quality research provides evidence that ‘career academy’ brand and organizational reorganizations have improved vocational education across the U.S and abroad (including, most notably, the United Kingdom).<sup>31</sup>

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<sup>30</sup> “Pathways to Prosperity” Report, Harvard Graduate School of Education, p. 25:  
[http://www.gse.harvard.edu/news\\_events/features/2011/Pathways\\_to\\_Prosperty\\_Feb2011.pdf](http://www.gse.harvard.edu/news_events/features/2011/Pathways_to_Prosperty_Feb2011.pdf)

<sup>31</sup> “Reforming High Schools: The Role of Career Academies,” Betsy Brand,  
[http://casn.berkeley.edu/resource\\_files/reforming.pdf](http://casn.berkeley.edu/resource_files/reforming.pdf); U.K. Career Academies, “About”:  
<http://www.careeracademies.org.uk/pages/about-us.html>; “Career Academies: Long-Term Impacts on Work, Education, and Transitions to Adulthood,” MDRC Report, <http://www.mdrc.org/career-academies-5>

### **3. There is too little overlap between the skills employers need and the skills technical high schools and community colleges teach.**

Human capital needs are critical in technical schools. While data on the precise scope of the mismatch between employer needs and student skills are unavailable, stakeholders report a pervasive sense that there is too often a mismatch between the rate of change in employers' job needs and the skill sets and knowledge bases of many of the teachers in the system.<sup>32</sup>

#### *a. Ascertaining Employer Needs*

Schools cannot teach skills employers need if schools do not know what those skills are. Vocational education curricula at technical high schools and community colleges are usually determined by a committee of stakeholders led by teachers in the relevant department. Our interviewees attest that, all too often, teachers choose the path of least resistance by asking former co-workers and friends to sit on these committees and rubber stamp the curriculum the teacher thinks best.

School principals or vice principals must ensure that curriculum committees include representatives from local employers in the career fields for which schools are nominally committed to training students. The General Assembly could facilitate this by requiring, for instance, that Regional Employment Boards appoint a certain number of employer representatives to sit on each curricular committee. The Regional Employment Board leadership can ensure that appointed employers do not treat these curriculum committees as opportunities to advocate for an ultra-specific set of skills usable only for their company, but rather to advocate for a generalizable yet useful skill set for their industry.

#### *b. Ensuring Teachers Have the Relevant Skills*

Once the skills employer needs are identified, schools must ensure teachers have the requisite training and experience to teach them. **Employers' needs change every 5-7 years, while technical school faculty work for 25 years or more with few opportunities for professional development. Given the large percentage of faculty expected to retire in the next 5 years, professional development will be particularly important for new hires, just as funding for early retirement will be valuable for older instructors with outmoded skills.**

In the private sector, companies whose customer needs changed faster than its workforce turnover would have a line item in the budget to provide for retraining, early retirement, and other transitional possibilities. This item could be as much as 5% of the salary budget, to keep the faculty current and engaged. In the technical high schools and community colleges, a similar line item could be devoted to teachers keeping their skills current through work-study programs,

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<sup>32</sup> Our interviewing findings in this area are corroborated by many sources examining skills shortages in regional and national context. *E.g.* Federal Reserve Bank of St. Louis, 7/11, "The Mismatch between Job Openings and Job Seeker," <http://www.stlouisfed.org/publications/re/articles/?id=2123>; BusinessWeek, 7/25/12, "Companies Say 3 Million Unfilled Positions in Skill Crisis: Jobs" <http://www.bloomberg.com/news/2012-07-25/companies-say-3-million-unfilled-positions-in-skill-crisis-jobs.html#embed-0>

online learning, and other professional development opportunities. **One interviewee went so far as to recommend a mandatory semester-long externship once every 3 years for every vocational education instructor.** Instructors would spend their externship learning contemporary trade skills and developing important ties with state employers.

These externship programs are common in countries at the forefront of vocational education such as Canada, Germany, and Finland.<sup>33</sup> Studies of these experiences have found that they succeeded in making teachers more effective when they returned to schools.<sup>34</sup>

### TRIED AND TRUE: Florida and C.T.E. Reform

In 2007, the Florida state legislature passed a landmark reform of the state's career and technical education (CTE) system. One key plank of the reform was a rigorous focus on ensuring that Florida's technical high schools and community colleges taught skills that employers actually needed, as opposed to outmoded skills that some teachers are more comfortable teaching. The legislature mandated consistent oversight of curriculum development at the district- and principal-levels, frequent collaboration with employer groups, and employer assistance in training teachers in necessary skills. Florida now has one of the more successful workforce training education systems in the United States.

Here in Connecticut, the Connecticut Business and Industry Association (CBIA) already organizes externships for high school and college instructors in conjunction with the Regional Center for Next Generation Manufacturing (RCNGM). Teachers spend four weeks at their sponsor company developing projects around new skills and understandings gained from their work experience. They participate in RCNGM workshops, meet other teachers to share knowledge and best practices, and publish projects and lesson plans that can be integrated into their curricula.<sup>35</sup>

The CBIA model provides a clear example of how this program could work across Connecticut. Every community college and technical high school in Connecticut should work with regional employer boards to develop a similar program for their instructors. Employers have expressed support for these ideas. Providing and funding these externships they will go a long way toward funding the 5% of salary required to keep teachers' skills current. Employers could also

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<sup>33</sup> For examples of articulation agreement principles from leading European countries, see [http://www.education.ie/en/Circulars-and-Forms/Active-Circulars/cl0107\\_2006.pdf](http://www.education.ie/en/Circulars-and-Forms/Active-Circulars/cl0107_2006.pdf), [http://ec.europa.eu/education/lifelong-learning-policy/doc/natreport09/finland\\_en.pdf](http://ec.europa.eu/education/lifelong-learning-policy/doc/natreport09/finland_en.pdf); In Germany—one of the most successful vocational education systems in the world—employer organizations play a major role in defining the curriculum, providing internships, and assessing student performance. Connecticut schools should welcome, and Connecticut employers should provide, more employer input into standards-setting, training, and hiring. (Source: Grubb & Lazerson, *The Education Gospel*)

<sup>34</sup> E.g. <http://www.questia.com/library/1G1-14526371/teachers-on-secondment-their-perceptions-of-the-experience>, [http://www.education.ie/en/Circulars-and-Forms/Active-Circulars/cl0107\\_2006.pdf](http://www.education.ie/en/Circulars-and-Forms/Active-Circulars/cl0107_2006.pdf), [http://ec.europa.eu/education/lifelong-learning-policy/doc/natreport09/finland\\_en.pdf](http://ec.europa.eu/education/lifelong-learning-policy/doc/natreport09/finland_en.pdf)

<sup>35</sup> For more detail on how the CBIA externship program works, see: <http://www.cbia.com/edf/teacherexternships.htm>

subsidize current and retired employees to work part-time as adjunct instructors and offer students for-credit internships. Both of these would offer students high-impact educational opportunities while also saving schools' instructional costs.

### *c. Social Media Exchanges*

Connecticut's technical high schools and community colleges each should develop an informal, social media-based platform for students, employers, and teachers/school administrators to discuss curriculum development, teaching quality, internship/externship opportunities, *etc.* If hosted on Facebook, for example, the platform could facilitate the exchange of important, useful information for a very small upfront cost.

Technical high schools and community colleges could set up online forums for numerous purposes, including:

1. Allowing students to discuss with Connecticut employers which hard skills students need to become attractive job applicants
2. Allowing school administrators and teachers to discuss with employers what kind of help schools could use as far as after-school or adjunct instructors to teach specific skillsets
3. Allowing students to connect with technical high school or community college alumni about how to find a fulfilling, well-paid job after graduation
4. Making it easy for school alumni to provide feedback on the uses and limits of the skills schools teach to their students, especially in terms of whether students find fulfilling, well-paid jobs after graduation

There are many more possible, potentially beneficial ideas, none of which would be difficult to costly to set up and run. While this proposal is novel, there is little risk. Many for-profit companies, including Starbucks, Coca-Cola, and Disney, have established Facebook pages and have beneficial exchanges with customers.<sup>36</sup> Even if online forums through Facebook, Twitter or elsewhere become underutilized, the costs of introducing such a platform would be negligible. A social media platform like the one we recommend is low risk yet high reward.

### *d. Making Better Use of Charter Oak*

Charter Oak State College, Connecticut's primary online state college, can serve a number of important, currently unmet, needs across the state's career education system. Charter Oak could be better used in a number of ways. All of these innovations would be cost-effective:

- Technical high schools should be encouraged to make more use of Charter Oak as a way to support the high schools' curricula.
- Instead of forcing students to sit through remedial, semester-long courses that may be unnecessarily long, community colleges should choose appropriate online, low cost curricula for remedial-level math and reading and collaborate with Charter Oak on the delivery of this courseware using non-traditional approaches.

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<sup>36</sup> Jeff Bullas, "The World's 10 Most Popular Company Facebook Pages":  
<http://www.jeffbullas.com/2010/11/04/the-worlds-10-most-popular-company-facebook-pages/>



- Both technical high schools and community colleges should use Charter Oak to promote the continuing education and skill development of faculty and administration.
- Where it is cost- and quality-effective relative to traditional instruction, both technical high schools and community colleges should make greater use of e-learning through Charter Oak or a similar online learning platform.
- Charter Oak should be charged to access “best practice” coursework from all over the United States and across Connecticut.

## **Conclusion – A Connecticut Plan of Action**

This paper has proposed an aggressive, multifaceted reform of the state’s vocational education system. In review, we offer a game plan for reform, with notes on what each stakeholder group needs to do to make Connecticut’s vocational education system world-class:

### *The Connecticut General Assembly*

- Pass legislation requiring the states’ twelve community colleges to develop system-wide “articulation agreements” with technical high schools and each other. The legislation should provide guidelines and standards for the agreements’ rigor and promote “grade 9-14” vocational education programs.
- Better coordinate appropriations to promote synergy between the technical high schools and community colleges and improve outcomes within each system. As first steps, the Assembly should:
  - Allocate funding for grade 9-14 career education programs developed in articulation agreements.
  - Require each technical high school and community college to develop an e-learning remediation program to reduce remediation costs without sacrificing educational quality.
  - Fund adequate student-advisor ratios at each school.
  - Reserve 5% of the annual salary budget for teacher retraining, early retirement, and other transitional possibilities.
  - Allocate funding for enhanced planning & analysis functions and student advising functions at the technical high schools and community colleges, offset by in-kind employer contributions.
  - Include the first few years’ of post-completion planning costs for any new facilities/capital projects.
  - More generally condition appropriations in part on schools’ graduation and job placement rates rather than exclusively on enrollment.
- Require that each technical high school and community college’s curriculum committee contain a certain number of employer representatives, to be appointed by the local Regional Employment Board.

### *Connecticut Employers*

- Work with Regional Employment Boards to develop externships for vocational school teachers modeled on the CBIA-NGCM program.
- Subsidize employees to work as adjunct instructors at vocational schools.
- Work in consultation with schools to develop semester-long externship programs designed to allow school instructors to burnish their skill set every few years.
- Develop internship programs for students that tie into community college-vocational school articulation agreements.
- Subsidize planning & analysis workers for 3 or 6 month internship rotations in the new planning & analysis centers in the vocational schools.
- Volunteer employee time to sit on curriculum development committees at technical high schools and community colleges.
- Work through Regional Employment Boards to develop a common application for graduates of Connecticut technical high schools and community colleges that includes an “e-portfolio” of students’ work.

### *Community Colleges and Technical High Schools*

- Invest more in student advisors, especially at the community college level.
- Make greater use of e-learning for remedial education, especially through the expansion of Charter Oak State College.
- Commence a concerted marketing, public relations, and communications campaign designed to help Connecticut students understand the salary and job security benefits of receiving a high quality education at one of Connecticut’s technical high schools or community colleges.
- Work with employers to start up Facebook pages that allow students and employers to interact and exchange information on necessary skills, interesting school projects, *etc.*
- Work with employers to set up an effective “common application” that assesses both hard and soft skills to help match suitable job applicants with interested employers.
- Participate in discussions about what skill sets and personality traits should be measured by the “common application.”
- Plan for the Wright Tech/Norwalk Community College to be (a) a “grade 9-14” program, and (b) a demonstration of how similar arrangements can work between other technical high schools and community colleges.

## **Appendix 1: Connecticut's Technical High Schools**

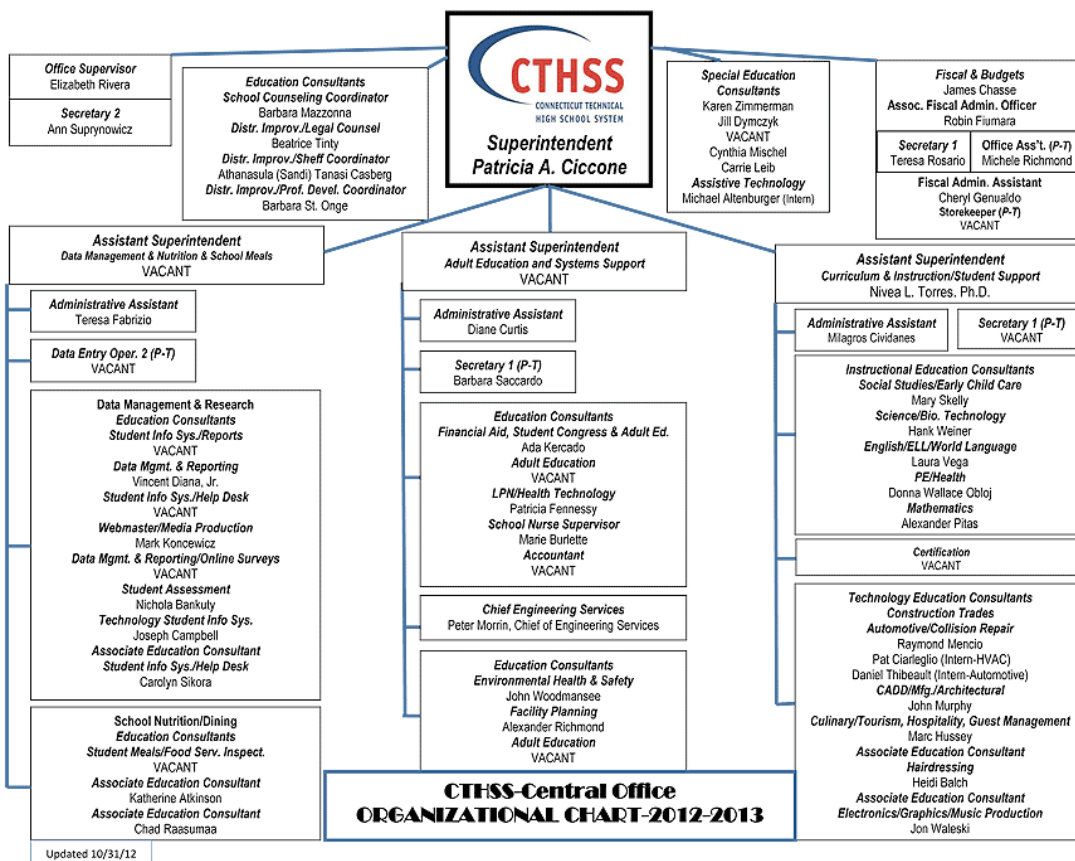
<b>Name</b>	<b>Location</b>	<b>Annual Budget, 2010</b>
Henry Abbott	Danbury, CT	\$8.6 million
Bristol T.E.C.	Bristol, CT	\$2.3 million
Bullard-Havens	Bridgeport, CT	\$11 million
Cheney	Manchester, CT	\$8.3 million
Cheney Aero Tech	Hartford, CT	\$437,000
Ellis	Danielson, CT	\$7.4 million
Goodwin	New Britain, CT	\$8.6 million
Grasso	Groton, CT	\$8.5 million
Kaynor	Waterbury, CT	\$9.5 million
Norwich	Norwich, CT	\$7.9 million
O'Brien	Ansonia, CT	\$7.3 million
Platt	Milford, CT	\$9.5 million
Prince	Hartford, CT	\$10.9 million
Vinal	Middletown, CT	\$8.8 million
Stratford	Stratford, CT	\$533,000
Whitney	Hamden, CT	\$9 million
Wilcox	Meriden, CT	\$9.3 million
Windham	Willimantic, CT	\$7.3 million
Wolcott	Torrington, CT	\$8.6 million
Wright*	Stamford, CT	N/A

\* Wright Technical High School is currently undergoing renovation.

## Appendix 2: Connecticut's Community Colleges

Name	Location
Asnuntuck	Enfield, CT
Capital	Hartford, CT
Gateway	New Haven, CT
Housatonic	Bridgeport, CT
Manchester	Manchester, CT
Middlesex	Middletown, CT
Naugatuck Valley	Waterbury, CT
Northwestern CT	Winsted, CT
Norwalk	Norwalk, CT
Quinebaug Valley	Danielson, CT
Three Rivers	Norwich, CT
Tunxis	Farmington, CT

## Appendix 3: Technical High School System Current Org. Chart



## **Appendix 4: Sample Job Application Websites**

Snagajob.com

Monster.com

Connecticut Department of Administrative Services Employment Connection

(<http://das.ct.gov/cr1.aspx?page=13>)

AT&T Connecticut Jobs Portal (<http://connect.att.jobs/connecticut-jobs>)

Western Connecticut State Job Portal (<http://www.wcsu.edu/hr/employment/current.asp>)

City of Bristol Job Application Portal

(<http://www.applitrack.com/bristolct/onlineapp/default.asp>)

The Work Place's Employment Search Assistance (<http://www.workplace.org/training-and-education.php>)

## **Appendix 5: Return on Investment Analysis**

A liberal estimate of the costs of our recommendations is \$10-15 million (even assuming relatively infrequent and low-level contributions from employers). If you assume that the average skilled graduate of a technical high school or community college earns \$35,000 per year, each graduate pays approximately \$1,750 in Connecticut state taxes per year (at the current 5% tax rate).<sup>37</sup> If our recommendations generate 20,000 new jobs, the per annum boost to government revenue would be \$35 million. Even if our recommendations only generated 5,000 new jobs and one did not count the ancillary benefits of increased employment across the state, the return on investment would still be extremely high. Additionally, with such a large capital projects budget, Connecticut's community colleges and technical high schools would likely not struggle to find \$10-15 million dollars for initial investments in our recommendations.

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<sup>37</sup> The \$35,000 figure is drawn from the lower end of the average salary for a manufacturing worker in Hartford, CT: <http://www.cbsalary.com/salary-calculator/chart/Manufacturing+Worker/CT/Hartford?tid=531&jn=JN013&kw=Manufacturing+Worker>