

# A GREEN CAREER PATHWAYS FRAMEWORK:

Postsecondary and Employment Success  
for Low-Income, Disconnected Youth



**AUTHORS:**

Terry Grobe  
Kate O'Sullivan  
Sally T. Prouty  
with Sarah White



**The  
CorpsNetwork**

Strengthening America through  
service and conservation



# A GREEN CAREER PATHWAYS FRAMEWORK:

## Postsecondary and Employment Success for Low-Income, Disconnected Youth

### Authors:

Terry Grobe  
Kate O'Sullivan  
Sally T. Prouty  
with Sarah White

### About The Corps Network

Established in 1985, The Corps Network is the voice of the nation's 158 Service and Conservation Corps. Currently operating in 46 states and the District of Columbia, Corps employ 33,300 young men and women annually and generate approximately 265,000 community volunteers who in partnership with Corpsmembers provide 15.3 million hours of service to their communities and the environment.

### Published by

The Corps Network  
1100 G Street NW, Suite 1000  
Washington, DC 20005  
(P) 202.737.6272  
(F) 202.737.6277  
[www.corpsnetwork.org](http://www.corpsnetwork.org)

June 2011

### Funding

We gratefully acknowledge the Bill & Melinda Gates Foundation and the W.K. Kellogg Foundation for their generous support of this project.





# Table of Contents

|   |           |
|---|-----------|
| <b>Executive Summary</b> .....  | <b>4</b>  |
| <b>Introduction</b> .....   | <b>6</b>  |
| <b>Green Jobs and Low-Income, Disconnected Youth</b> .....                                      | <b>8</b>  |
| What are “Green Jobs?” .....  | 8         |
| How Can Disconnected Youth Contribute to the Green Economy?.....                                | 9         |
| What Green Jobs Should Youth Prepare For? .....   | 11        |
| Why Are Credentials Important? .....  | 11        |
| What is the State of Green Credentialing?.....  | 11        |
| How Does Environmental Sustainability Fit into Workforce Development?.....                      | 13        |
| What Types of Institutions Contribute to the Development of Green Career Pathways? .....        | 14        |
| <b>The Framework</b> .....  | <b>17</b> |
| Ensuring Credentials have Labor Market Value .....  | 19        |
| Exploring Local Pathway Development Work .....  | 19        |
| What is the Demand for Green Jobs in the Community or Region? .....                             | 19        |
| What are the Skills and Experience Needed to Enter and Advance in these Green Industries? ..... | 21        |
| What Postsecondary Courses of Study Best Align with these Green Industries?.....                | 23        |
| How do Workers Enter and Advance in these Green Industries? .....                               | 24        |
| Implications of Credentialing and Career Pathway Work for Youth Programs .....                  | 27        |
| The On-Ramp Model: Connecting Youth to Green Career Pathways.....                               | 27        |
| Phase 1: Enriched Preparation .....   | 29        |
| Phase 2: Bridging and Transition.....   | 36        |
| Phase 3: Starting Smart: First Year Supports to Completion.....                                 | 37        |
| Connecting Youth Programs and Postsecondary Institutions .....                                  | 41        |
| <b>Conclusion</b> .....   | <b>45</b> |
| <b>Acknowledgments</b> .....  | <b>48</b> |
| <b>Endnotes</b> .....   | <b>50</b> |

## Executive Summary

One of the most promising developments of the past several years is the emergence of a green economy. With environmental awareness growing across this country, green skills are being added to existing occupations (in fields such as energy and engineering) and new jobs that are primarily “green” are rapidly emerging. Green jobs — jobs that contribute to meeting the goal of achieving environmental sustainability — encompass a broad range of occupations and skill sets, from technical expertise in building, retrofitting, conservation, or planning, to business functions that support the work such as sales, customer service, or accounting. Some green jobs are new; others represent the retooling of existing occupations. Jobs range from entry level positions to those requiring advanced credentials, but most are “middle-skill,” requiring more than a high school degree but less than a four-year college education.

The green jobs sector of the economy is expanding, showing considerable growth and long-term employment potential despite the recession. National groups and lead states such as Michigan and Washington have documented the growth of jobs in this relatively new sector. Green jobs also show potential to offer workers a living wage. Employers are working with partners to establish credentials for green jobs and define career pathways that will ensure an adequate and skilled labor force that can keep pace with future demand.

A collective hope is that the “greening” of our economy will lead to greater environmental sustainability and to the economic revitalization of our communities, as well as impel development of new or retooled occupations and new career pathways that offer avenues to prosperity for workforce entrants and under-skilled youth and adults.

This paper explores the extent to which this emerging green economy can offer a pathway out of poverty for low-income young people, many of whom have disengaged from school and are struggling to find a way into the economic mainstream. These disconnected youth — some six million strong — represent an untapped resource. Despite the fact that they have experienced difficulties in their personal lives or communities and may not have completed high school, many seek a second chance, returning to programs such as Service and Conservation

Corps or other education and work initiatives in their local communities. Given the right supports, these young people can be valuable assets for new green industries seeking to grow a skilled workforce and to the communities in which they reside. Further, youth involved in Corps and other work and service oriented programs can learn and practice skills that give them a “leg up” in terms of entering green industries or providing environmental or conservation assistance to a range of local institutions.

What these young people need to fulfill their promise and meet their life goals is an effective on-ramp to emerging green pathways. This paper offers guidance to youth programs, and those who work with and support those programs, about how to learn more about and access industry-driven green credentialing and career pathways development work within local communities or regions. It then discusses how, with this knowledge in hand, youth programs can work with employers and postsecondary partners to build on-ramps to postsecondary technical training programs and entry to green careers. The paper offers a multi-step Framework that outlines strategies for connecting to career pathway efforts and delineates a three-phase model design to inform the construction of on-ramp programming.

The paper offers specific guidance on how to develop intensive and well aligned on-ramp programs that enable older youth to access and succeed in education and training for green careers, particularly in conjunction with industries with immediate labor market needs, jobs that are considered “in demand.” Drawing on early results of programs supported by the Bill & Melinda Gates Foundation sponsored “Postsecondary Success Initiative,” the paper delineates and discusses a three-part “college connected” on-ramp design that can dramatically improve the odds for disconnected youth to enter and succeed in postsecondary courses of study required by most green careers. The paper provides specifics and examples of each aspect of the model design and illustrates how on-ramp programs depend on tight partnerships (and shared resources) between program staff, postsecondary partners and employers seeking to build a green workforce. An effective on-ramp requires that youth begin programs with an expectation that they will prepare to enter postsecondary programs of study, and that programs engage youth in a powerful and transformative set of integrated educa-

tion, service, and work experiences. Once youth are prepared to take the next step, the model outlines how partners build bridging experiences to ensure a successful transition to postsecondary, and construct the right set of supports to enable youth to complete postsecondary courses of study to attain credentials and jobs in the desired fields.

The final section of the paper highlights the importance of active partnerships between community-based youth programs

and postsecondary institutions in building on-ramp programming to green jobs. The paper outlines a number of strategies for forging these partnerships successfully. In conclusion, the paper raises the question of how this work could go to scale, offering some brief suggestions on how the policy and advocacy and employer communities might help impel these partnered efforts towards more powerful results for young people, for businesses and for the health and well-being of communities.

## SUCCESS STORY



### Reconnecting via Green Career Pathways: Profile of **Tyler Rose**

**CURRENT JOB:** Energy Auditor

**FORMER PROGRAM:** Coconino Rural Environment Corps (Flagstaff, AZ)

Tyler Rose dropped out of high school his senior year. Life was complicated for Tyler, who was about to become a father.

Through a local career center, Tyler was connected with YouthBuild where he earned his GED while also gaining construction skills by working on affordable housing. After completing the YouthBuild program, Tyler applied to Coconino Rural Environment Corps (CREC).

After enrolling at CREC, he attended the Energy Conservation Corps (ECC) skills training through Coconino Community College, earning his certificates in Workplace Readiness, Introduction to Energy Auditing, Energy Basics, and Construction Safety.

In addition to learning how to weatherize and safely seal homes through his experience with CREC, Tyler improved his speaking/people skills by going door to door passing out educational flyers. He also figured out that he wanted to make a career out of his green construction skills and energy efficiency knowledge. Tyler's hard work and experience led to a permanent job with E-3 Energy, a local green energy company.

Tyler says it's "the best job I've ever had." As an energy auditor, Tyler tests homes to find out how energy efficient they are using a blower test and pressure readings. He then helps to do the caulking, weather-stripping, and fixture replacement that will greatly improve the efficiency of the home, as well as improve health and safety.

Tyler is working hard to become a Building Performance Institute Certified Building Analyst. Once certified, Tyler will be able to perform building energy audits independently and/or advance within his current company.

While he says that being the single father of a 3 year old can be challenging, he's happy with the progress he's made on a green career pathway and takes pride in the fact that he's making the world a better place—one house at a time.

## Introduction

One of the most promising developments of the past several years is the emergence of a green economy. Green jobs — jobs that contribute to meeting the goal of achieving environmental sustainability — encompass a broad range of occupations and skill sets, from technical expertise in building, retrofitting, conservation, or planning, to business functions that support work such as sales, customer service, or accounting. Some green jobs are new; others represent the retooling of existing occupations. Jobs range from entry level positions to those requiring advanced credentials, but most are “middle-skill,” requiring more than a high school degree but less than a four-year college education.

The hope is that the “greening” of our economy will lead to greater environmental sustainability and to the economic revitalization of our communities, as well as impel development of new or retooled occupations and new career pathways that offer avenues to prosperity for new workforce entrants and under-skilled youth and adults.

This paper explores the extent to which the emerging green economy can offer a pathway out of poverty for low-income young people, many of whom have disengaged from school and/or are struggling to find a way into the economic mainstream. The paper begins by describing the green jobs field and discussing why green pathways are an important opportunity for disconnected youth. These young people — some six million strong — represent a valuable untapped resource to emerging industries and to local communities. With the right supports, these young people can access technical training programs beyond high school, enter new green industries (bringing with them new and valued skills) and advance to higher levels of expertise and career growth. Supporting youth to gain credentials and technical skills needed within growing or emerging green industries represents a winning proposition for young people, for local businesses and for the communities in which these youth and industries reside. Youth involved in Service and Conservation Corps and other work and service oriented programs are well positioned to learn and practice skills in areas such as energy auditing and retrofitting, conservation, natural

resources and land management and disaster preparation and recovery, all while becoming leaders and problem solvers in their communities — giving them a “leg up” in terms of entry into new green jobs fields.

The bulk of the paper presents a multi-part Framework constructed to help program practitioners link disconnected youth to green career pathways. The first section of the Framework outlines the type of career pathway work currently underway in many communities or regions of this country. It illustrates how partners can work closely with industry to investigate green job fields, determine labor market demand for green jobs and identify what credentials have the most value (in some cases developing new credentials; in others, adding green elements to already

*With the right supports, these young people can access technical training programs beyond high school, enter new green industries (bringing with them new and valued skills) and advance to higher levels of expertise and career growth.*

existing and valued credentials). This section also explains how postsecondary and industry partners can better align technical training to develop the skills and experiences employers most need, resulting in a first credential with value in the labor market which connects to subsequent “stackable” credentials that lead to career advancement.

The paper argues that youth programs must link with and learn more about these efforts as a first step in exploring the efficacy of building an on-ramp for youth to “in demand” green careers.

The Framework then shows how youth program leaders can use information on the most well developed (and in demand) career pathways to design strong on-ramps to postsecondary credentials that enable entry to green careers. The paper proposes a three-phase model design, which includes building longer, more intensive programs that provide the technical and

professional skills development, experiences and supports that allow youth to enter postsecondary education well prepared and enable youth to succeed once there. The paper lays out each phase of the model and showcases short case studies of young people and their trajectories into green jobs as well as examples of how youth programs and partners have built the components of the on-ramp model to align to green careers.

The paper describes ways that youth programs need to work closely with postsecondary partners and employers to ensure that program services actually ready youth to succeed in postsecondary programs of study and enter and advance in green careers. Finally, the paper argues for the scale of “college connected” on-ramp models and offers brief ideas on how a range of stakeholders can help incent local partnerships in order grow career pathway and on-ramp efforts.

To inform this paper, the Corps Network and several partners — the Academy for Educational Development; Green for All; Center on Wisconsin Strategies; and Workforce Strategy Center — convened a Working Group of leading minds from the fields of green jobs, youth workforce development, and education (see the end of the paper for a list of the Working Group participants). The Corps Network, with assistance from Jobs for the Future, combined the Working Group’s insights with additional research on lessons from youth development, workforce development, education, and the emerging green economy to produce the paper. The Bill & Melinda Gates Foundation and the W.T. Kellogg Foundation supported the effort.

While Service and Conservation Corps programs serve as key examples throughout this paper, The Corps Network recognizes that many exemplary programs serve as on-ramps for youth to green career pathways, including Job Corps, YouthBuild and many local programs funded under the Workforce Investment Act. Many of these other programs may work in partnership with or are also Corps programs. The Corps Network also recognizes the many communities that host and support these programs. All are working toward a common goal: to expand opportunities for reengaging disconnected youth and to connect these youth to the opportunities the emerging green economy offers.

### Service and Conservation Corps: an Overview

A legacy of the Depression-era Civilian Conservation Corps, modern day Service and Conservation Corps are state and local programs engaging primarily youth and young adults (16 – 24) in service. In 2010, Corps operated in 46 states and enrolled over 33,000 youth, called “corpsmembers.” A majority of members come to Corps looking for a second chance to succeed in life. In return for their efforts, they receive guidance from adult leaders who serve as mentors and role models, a modest stipend, a wide range of supports and services, the opportunity to engage in education, develop life skills, and prepare for postsecondary education and careers — all while investing in communities and the environment.

Corps have engaged in “green” work for many years.

Examples include:

- Educating youth and communities in environmentally conscious practices
- Energy audits/weatherizing low-income homes
- Enhancing public lands and open spaces
- Building and maintaining trails
- Restoring natural habitat, rivers and streams
- Reducing waste/recycling

In the late 1990s, with support from the Charles Stewart Mott Foundation, William Randolph Hearst Foundation and Wallace-Reader’s Digest Funds, The Corps Network (then NASCC) launched a Corps to Career initiative — a multi-year collaboration between The Corps Network and its member Corps aimed at infusing highly effective workforce development strategies into the traditional program model. Building on that initiative, (with support from Open Society Foundations, the Bill & Melinda Gates Foundation, U.S. Department of Labor and the Corporation for National and Community Service), the Civic Justice Corps — which enrolls formerly incarcerated and court involved young people — was developed to assure that those least likely to benefit from the Corps experience were affirmatively recruited and provided the necessary supports and services to succeed. Results are promising with dramatic reductions in recidivism and significant career preparation gains.

# Green Jobs and Low-Income, Disconnected Youth

## What are “Green Jobs?”

In recent years, a movement has flourished in the United States to create an economy robust with “green jobs.” Green jobs are jobs that contribute to meeting the goal of achieving environmental sustainability. Green jobs presently exist in every sector of the economy, from energy conservation, manufacturing and green construction to transportation, land management, and agriculture and forestry.

Green jobs encompass a broad range of occupations and skill sets, from technical expertise in building, retrofitting, conservation, or planning to business functions that support the work such as sales, customer service, or accounting. Some green jobs are new; others represent the retooling of existing occupations. Jobs range from entry level positions to those requiring advanced credentials, but most are “middle-skill,” requiring more than a high school degree but less than a four-year college education.<sup>1</sup>

A number of reports have begun to define the green economy. The Michigan Department of Energy, Labor and Economic Growth’s 2009 Green Jobs Report outlined the green economy in five areas: renewable energy, increased energy efficiency, clean transportation and fuels, agriculture and natural resource conservation and pollution prevention (or environmental clean-up).<sup>2</sup> A study from the Pew Charitable Trusts delved into the clean energy sector, identifying five categories within that sector: clean energy, energy efficiency, environmentally friendly production, conservation and pollution mitigation and training and support. Examples of jobs in clean energy included electricians and plumbers, mechanics, plant operators, and technicians. Jobs in environmentally friendly production included construction workers, agriculture engineers and technicians, product designers and engineers. Conservation jobs included hazardous waste specialists, machinists, systems operators, environmental consultants and scientists.<sup>3</sup>

Green jobs have the potential to offer workers a living wage. An Urban Institute brief entitled “Low Skill Workers’ Access to

Quality Green Jobs” cites a number of studies suggesting that green jobs are concentrated in the middle-skill sector (e.g. requiring postsecondary education but not a four-year degree while paying above \$15 per hour). The brief indicates that over half the occupations in renewable energy are middle-skill jobs such as geothermal heat pump machinists and biofuel processing technicians; less than a tenth are low-skill jobs.<sup>4</sup> In Michigan, according to the state’s 2009 Green Jobs Report, “green-related industries hold the potential for workers to earn above average wage rates. Thirteen of the top 15 broad industries in terms of green jobs paid more than the private sector average weekly wage of \$811, while ten were well above this average (at least \$100 per week more). Furthermore, eight of the top 15 green industries paid more than \$1,000 per week, or over \$50,000 per year.”<sup>5</sup>

Green jobs have shown considerable growth and long-term employment potential despite the recession. Lead states such as Michigan, Washington and others have documented the growth of jobs in this relatively new sector. The Michigan 2009 Green Jobs Report found that from 2005 to 2008, a sample of 358 green related firms added more than 2,500 jobs to Michigan’s economy: an employment growth rate of 7.7% compared to the private sector average of negative 5.4% during the same period. Among the renewable energy production companies, the growth rate was 30%.<sup>6</sup> The Pew Charitable Trusts study illustrated that jobs in the clean energy economy had grown considerably throughout the country, and at a faster rate than overall jobs. The clean energy economy extended to all 50 states, and venture capital investment outpaced other sectors.<sup>7</sup>

The federal government is also playing a strong role in the growth of the green economy. Most recently the American Reinvestment and Recovery Act (ARRA) included an investment of \$80 billion in renewable energy, clean technologies and vehicle and fuel technologies. Tighter efficiency standards for appliances and cars and removing barriers to home retrofitting will likely drive the growth of more jobs in this emerging sector.<sup>8</sup> These are exciting developments. And yet while policy experts

### The U.S. Department of the Interior and Green Job Opportunities for Youth

With a mission to protect and manage the nation's natural and cultural resources, the Department of the Interior (DOI) has many programs and initiatives that support the environment. As such, it also has a number of jobs or occupations that can readily be categorized as "green." These occupations involve work that protects, conserves, preserves, and restores the nation's natural resources. Many of these occupations are well-suited for hiring employees at entry level and, through training and development, promoting them to highly responsible journeyman level positions within the Department. According to DOI, the salaries for these positions start at approximately \$24,000 for GS-2 positions up to \$60,000 for GS-11 positions.

Secretary Ken Salazar has set a vision for the Department of Interior that includes the "Youth in the Great Outdoors" initiative. The initiative aims to employ, educate and engage young people from all backgrounds, including underserved populations, in exploring, connecting with and preserving America's natural and cultural heritage. In partnership with The Corps Network and other organizations, DOI is working to build a pipeline that connects young people to green careers, seeking to help transform the lives of young Americans while growing the next generation of conservation and community leaders. DOI and The Corps Network signed a five year Memorandum of Understanding in early 2011 to continue and expand their cooperative work on these efforts.

are identifying the infrastructural, technological, societal, and political changes that will be required for a green economy (and its jobs) to build rapidly from the top down, few experts to date are able to articulate how to prepare a workforce for these jobs from the bottom up.

### How Can Disconnected Youth Contribute to the Green Economy?

As the green jobs economy grows and demands a skilled workforce, our country has pockets of undereducated youth that represent a large untapped talent pool. Currently, one-third of U.S. youth do not graduate from high school. Nearly 6 million 16- to 24-year olds are not in school and not working,<sup>9</sup> a group often described as disconnected youth. Lacking adequate skills, employment track records or postsecondary credentials, and struggling with challenges related to poverty, many disconnected youth — without an intervention — have little likelihood of obtaining or maintaining living-wage employment.

However, with the right supports in place, programs across the country are demonstrating success in helping low-income,

disconnected youth obtain skills, credentials, and career-track jobs. The National Youth Employment Coalition's PEPNet quality initiative<sup>10</sup> validates "best in class" programs — these effective programs connect learning with in-demand work opportunities and provide individualized, comprehensive supports to enable and reinforce youth success. Some of these programs, such as the Excellence in Corps Operations (ECO) sites of The Corps Network, find that green jobs offer an excellent fit for many disconnected youth, giving them a strong opportunity for a career that could support them and their families.

More recently, The Postsecondary Success Initiative (supported by the Bill & Melinda Gates Foundation) is showing early evidence that community-based education partners, working with local community colleges, can fashion a pathway that readies young people for postsecondary education and helps them persist and complete programs once there. YouthBuild USA and the National Youth Employment Coalition, working with Jobs for the Future, are assisting 15 initial grantees (now expanding to 28) to improve postsecondary outcomes for older disconnected youth. These programs are moving well beyond typical second

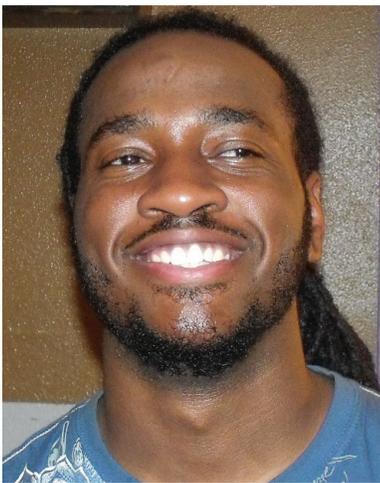
chance programs (offering either diploma or GED preparation) to build more intensive “college connected” designs. These programs use a broad definition of “college,” including not only four-year programs, but also two year Associates degrees and shorter term technical programs (at vocational schools or community colleges) that result in a credential with value in the labor market and apprenticeships. The initiative — now a couple of years in — is already demonstrating gains in secondary credential receipt, college enrollment and first year persistence.

Many programs find that technical fields offering access to green jobs are good routes for youth into a postsecondary program of study. Numerous green jobs exist within more fully articulated career pathways — a series of connected education and training programs and support services that enable individuals to secure employment and to advance over time

to successively higher levels of education and employment. Because of the stackable nature of credentials within these fields, these areas can be a particularly good fit for youth who struggle with academics and complex life situations. Youth can enter a green career of interest and earn an initial credential requiring a set of foundational competencies and within three to six months in many cases. The credential allows access to the first job. The young person then has the opportunity to gain the next credentials — each succeeding credential building on the one before and providing access to greater job responsibility and earnings. Often employers will support or finance employees in gaining the advanced credentials.

Gaining these types of credentials greatly increases long-term employment potential in an economy increasingly requiring education and training beyond high school. Post-

## SUCCESS STORY



### Reconnecting via Green Career Pathways: Profile of **Iryn Rowan**

**CURRENT JOB:** Plumbing/Pipefitting Apprentice, Gallo Mechanical

**FORMER PROGRAM:** Limitless Vistas, Inc. (New Orleans, LA)

Iryn Rowan grew up in a low-income home in New Orleans with a single parent. He struggled to avoid the drugs and violence that were pervasive in his community. By the time he was 22, he had drifted from job to job and found himself on a downward spiral. Realizing he needed to turn his life around, he joined the Limitless Vistas, Inc. (LVI) Training Program. LVI provided him the stability, life skills training and credentials he needed to start on a career path.

He demonstrated superb attendance, attitude, and commitment during his training. Iryn earned his 40-hour Hazardous Waste Operator, 32-hour Asbestos Worker, 10-hour OSHA Construction Safety and Lead and Mold Awareness certifications. LVI also exposed him to financial planning, life skills, community service and the need for constant educational development.

Upon completion of the LVI program, Iryn entered a subsidized pre-apprenticeship program and was hired at the Waterford Nuclear Plant in Taft, Louisiana as a pipe fitter. Well on his way to a career as a plumber and pipefitter, he currently works on both commercial and residential projects for Gallo Mechanical, a full service HVAC and plumbing contractor. He also attends Delgado Community College with the assistance of an AmeriCorps Education Award he earned while participating at LVI.

secondary options include industry-validated credentials and apprenticeships, as well as Associates and Bachelor Degree programs. Each level of education protects against stretches of unemployment. In May 2009, during the midst of the recession, The Bureau of Labor statistics reported that the unemployment rate for workers without a high school diploma was nearly 15%. For those with even some college, that rate fell almost by half. And the unemployment rate dropped to about 5% for those with a Bachelor's degree or higher.<sup>12</sup> Attaining a credential in a green career pathway would position many youth that have experienced academic struggles to have sustained employment and career growth. This will not only help address the country's pending shortage of skilled and educated workers, it will help mitigate other societal challenges such as reducing dependency on public assistance, unemployment, and involvement with the criminal justice system.

### What Green Jobs Should Youth Prepare For?

Employability relies as much on the labor market context as it does on an individual's knowledge, skills, and abilities. Green career pathways are only as good as the research that has gone into creating them. Community-based youth programs and postsecondary institutions must reach out and connect to local workforce and employer partners to learn more about the local and regional job market, learning about what occupations are in-demand, what the projected growth rate is within the industry and whether the sector is "graying" (needing replacement workers due to large numbers of workers retiring). Program staff should also look at available industry profiles including earnings and growth projections, as well as occupation level functions and required competencies. Employment demand varies from state to state or even region to region. For example, The Pew Charitable Trusts report cited earlier found that Texas generated more electricity from wind than any other state, while Tennessee was growing jobs in recycling, waste treatment and water management. Ohio ranked in the top five states with the most jobs in clean energy and energy efficiency, while Kansas, Mississippi and Idaho had lower numbers of actual jobs in the clean energy economy but a high average annual growth rate.<sup>13</sup> To succeed, young adults need guidance to explore among and select from the right certifications and pathways. Staff must be thoroughly

versed in the best options which have been vetted through research with industry partners.

### Why are Credentials Important?

Green Jobs reports from lead states show that green jobs usually require education and training beyond high school. A Washington State Green Economy Jobs report finds that among the 25 occupations with the largest number of green jobs, most require a mid-range education, defined as between one and four years of postsecondary study.<sup>14</sup> Other states report similar results. Thus academic skills remediation and hands-on technical training should lead to attainment of an industry-recognized credential that prepares youth for entry into jobs in the green economy. While community-based program providers can ready youth for green jobs through skills development, hands-on training, service projects or early college coursework, ensuring receipt of an industry-based credential will ensure that youth have the skills (and paper to prove it) to access good entry level jobs in the field. It is worth noting here that the green economy is new and emerging. A number of innovators at federal and state levels are attempting to create standards within the varied green sectors, but until this work is widely recognized, employers with green jobs may demand certificates in more traditional technical fields.

### What is the State of Green Credentialing?

While green credential work is new, it is also growing quickly. A number of industries, at times in concert with workforce and postsecondary partners, are working to develop green credentials. In *Greener Skills: How Credentials Create Value in the Clean Energy Economy*, the Center on Wisconsin Strategy (COWS) presented findings from a two-year survey of existing and emerging certifications related to clean energy occupations. COWS noted that when partners develop new, green credentials, they need to build them from a base of commonly recognized standards and credentials: "for workers it provides mobility, bargaining power, and higher returns in the labor market. For employers, it provides assurance that job applicants have the skills they need."<sup>15</sup>

COWS found that clean energy industries reflect the lack of national standards or credentialing systems throughout the U.S. labor market, with "a tumult of often inconsistent credentials and competencies across industries, employers, and providers."<sup>16</sup>

COWS advocated for developing a national skill credentialing system, inside and outside of green industries. COWS also provided a survey of some prominent national certifications and profiled local and regional efforts to develop credentials that aligned across systems and employers and promoted career pathways.

COWS reviewed hundreds of credentials for the Greener Skills report and found a wide range of quality. Green credentials, even if new, can be worthwhile; however, COWS stated, in order to be assured that credentials are a good investment for young people, they need to meet certain criteria so must be:

- (1) *meaningful* in the labor market, because they have value to employers (they will give priority in hiring to people with the credential);
- (2) *transparent*, workers know how to earn them and understand what the value of the credential is in terms of being hired, at what level and at what wage;
- (3) *embedded in a pathway*, clearly connected to a job and the next level of training;
- (4) *standardized*, reflecting common measures of competence; and
- (5) *portable* — not limited to a particular region, employer, or institution.<sup>17</sup>

While some standardized basic skills credentials have achieved decent market penetration, like the WorkKeys Career Readiness Certificate, markers for success and advancement through the initial steps of green career pathways are in most cases and at this point not clearly articulated, for workers or employers.

Fed by growing employer demand, the work of credentialing is growing rapidly, led by national organizations and entrepreneurial community colleges. For instance, South Piedmont, a six campus operation near Charlotte, North Carolina has established a sustainable technology degree now offered at all 58 community colleges in the state. The core of these development efforts is The Center for Sustainability that has strong partnerships with area employers. Through the Center's efforts, courses are designed to reflect the technical skills area high tech and bio-firms need and thereby ensure that students are well positioned

to compete for area jobs in green industries. A partnership with Habitat for Humanity also creates opportunities for students to get experience in green construction, including energy audits and retrofits. Santa Fe Community College is responding to immediate and mid-range green business needs in the region by offering technical training programs of study in solar energy, water conservation, bio-fuels and green building. All programs lead to certifications and Associates Degrees.<sup>18</sup>

States are providing increasing leadership and support for ventures like those mentioned above. But there is national energy here, too. Some are experimenting with the idea of "greening" career readiness — developing an eco literacy credential, for example. The Alliance to Save Energy is one innovator in this area. The Alliance has an internationally recognized Green Schools Program in which students are trained to assess energy

...courses are designed to reflect the technical skills area high tech and bio-firms need and thereby ensure that students are well positioned to compete for area jobs in green industries.

usage in their schools, identify potential for energy savings and design and implement solutions with the goal of saving energy. Adapted, it provides the basis for developing an eco literacy course of study in the Civic Justice Corps, The Corps Network's program that reengages formerly incarcerated and court involved young people with a focus on preparing participants for green careers.

The U.S. Department of Energy is also very active in this arena, currently engaged in a process to establish guidance for skill standards nationally, with a solicitation for public feedback on residential retrofit guidelines underway.<sup>19</sup> These guidelines were developed with industry experts and workforce development experts. The hope is that they will be used to increase the effectiveness and consistency of energy efficiency work performed on buildings, as well as help training programs develop training

### The Next Generation of Skilled Energy Workers: Center for Energy Workforce Development

The Center for Energy Workforce Development (CEWD) has spent the past several years identifying the challenges facing the energy industry and researching solutions that can be implemented to address these challenges industry-wide. In 2011, the Center shifted its focus to utilizing this information and research to establish programs that can make significant progress in filling the gaps in the workforce pipeline. “We’re very excited about seeing so much of our work finally come to fruition, in the form of well-designed pipeline development programs aligned with real industry needs,” said CEWD Executive Director Ann Randazzo. “We feel like 2011 is the year we will begin to see progress toward our industry-wide goal of recruiting and training the next generation of skilled energy workers. We won’t solve this problem overnight, but we’re beginning to take the first meaningful steps toward substantive, long-term solutions.”

In 2010, CEWD developed Get Into Energy Career Pathways (GIECP), a workforce development model that connects many of the Center’s processes and tools into a framework that can be used for multiple audiences. GIECP brings together industry representatives, education officials, and potential applicants — three key stakeholder groups — to ensure an appropriate match between training programs, industry needs, and valuable credentials for those seeking to fill energy jobs. In 2011, CEWD will focus on two Career Pathways initiatives: The Get Into Energy Career Pathways model for low-income young adults, funded by the Bill & Melinda Gates Foundation, and the new Troops to Energy Jobs initiative.

modules and field guides that are consistent across the nation.

What the U.S. Department of Energy is doing for weatherization/retrofit work should ideally occur in other green industries. Developing consistent industry standards at the national level in green fields that can be matched with training opportunities locally is essential.

### How Does Environmental Sustainability Fit into Workforce Development?

To thrive in the green economy, workers need skills and credentials but also need to develop the habits of mind, behaviors and perspectives that contribute to environmental sustainability. This sensibility may be aided by the recent uptick of environmentally sound practices being instituted in workplaces and education institutions. For example, community colleges have recognized the need to incorporate sustainable practices into their business operations and general courses. From implementing shared transportation programs to installation of low-flow toilets to LEED certified new construction, community colleges are adopting a culture of sustainability that is beginning to permeate the community at all levels.<sup>20</sup> Similarly, community-based organizations offering green job training programs often incorporate

environmentally-friendly approaches into their everyday practices. For organizations seeking to incorporate environmental literacy into their work with disconnected youth, a recent report from the National Institute of Corrections identified a number of nationally available curricula designed for individuals with literacy levels below ninth grade that had content appropriate for older youth or young adults.<sup>21</sup>

These kinds of initiatives raise the visibility of green practices and green careers and also offer opportunities to partner on service projects that build the institutions’ capacity to build and scale these practices. This work can also provide opportunities for program youth to offer energy audit services to local colleges, community agencies and other organizations as a way to earn money while continuing their education to a first credential or Associate’s degree.

The national focus on green jobs has encouraged the proliferation of green jobs training programs but many of these programs train workers in very limited ways. For example, short term weatherization training may prepare youth to improve the energy efficiency of a building while being entirely divorced from the larger principles of building science, green building and energy efficiency which make important contributions to

## PROGRAM IN ACTION

## Gulf Coast Restoration and Career Preparation

Located in New Orleans, Limitless Vistas, Inc. (LVI) is a non-profit organization devoted to creating opportunity for disconnected youth. Patrick Barnes, President of BFA Environmental Consultants, founded LVI with the premise: “the greatest opportunity coincides with the greatest need.” Infrastructure repair and environmental restoration needs are often greatest in poor communities; LVI provides an opportunity for affected individuals to participate in the on-going Gulf Coast Restoration effort and establish careers in industries with proven marketability.

Through focused, high skills training, LVI offers pathways to successful careers for youth in the environmental and construction industries. LVI provides various technical certifications; on-site experience; community service opportunities; life-skills development; and supportive activities (including mentoring, leadership development, budgeting and career planning). LVI offers entry-level job training and exposure to careers in coastal wetlands/ecosystem restoration, home weatherization, water and wastewater operations, phase I-III Environmental Site Assessments and soil/water sampling; and sustainable urban planning.

In 2010, EPA Administrator Lisa Jackson, a New Orleans native, presented LVI a federal grant to train 40 people a year in environment-related jobs, such as weatherizing homes, asbestos and lead removal, and environmental sampling. “These young people [working at a weatherization site] are finding out that there is a whole career available for them in the green economy — and for them it’s weatherization,” Jackson said. “For others, it might be scientific research and technical work. For others, it might be actually making wind turbines or fabricating renewable energy. But that’s the space, that’s the growth energy — that’s like the Internet was 20 years ago.”

the need for residential and commercial retrofits. Absent the connection to these types of larger guiding principles within the context of promoting sustainability, participants may not be ready to explore training and employment beyond short term employment opportunities. While it is important to help a young person connect to the labor market, a more important goal is to develop pathways to career growth and in this way also build a workforce that has the skills required to respond to the technical needs of these jobs. To meet these goals, all parties involved in career pathway preparation must balance short and long term workforce development interests while enabling trainees to understand the larger vision and goals of working to create a better environment.

### What Types of Institutions Contribute to the Development of Green Career Pathways?

Green career pathways demand that community-based providers, community colleges and other postsecondary institutions, Workforce Investment Boards, labor unions and employers

work together to build these career pathways and ensure that programming readies youth to enter and complete the education and training required to access the pathways. Each partner has an important role to play (and institutional challenges that must be addressed or shored up) in order to ensure that the system works for underprepared young people (and other non-traditional college students) seeking to access career pathway programming.

Nonprofit community-based organizations (CBOs), with their strong community roots, have a unique ability to build trusting relationships with youth and offer a safe and trusted setting for learning. These organizations can be uniquely suited to provide academic and technical training at the program site. They are also well positioned and are often funded to provide work and college ready skills development / supportive services that boost retention once youth enter postsecondary education. Colleges may particularly value this support, which helps shore up limited advising in cash strapped postsecondary institutions and provides critical assistance to youth in navigating a new and

sometimes confusing postsecondary environment. However, CBOs also are constrained by their reliance on shrinking pools of government grants and foundation funds, and need help from other partners to offer the range of education, training and employment opportunities that an effective career pathways approach requires.

Community colleges are central to this enterprise in that they offer the postsecondary programs of study in green and other technical areas. Faculty in these programs are valuable partners to community-based providers because they can consult with staff, review curriculum and help align study to ensure that the program offers the right academic press and that students enter ready to take on “for credit” coursework with no or little need for remediation. Community college partners may also be open to fashioning adjunct faculty or loaned faculty arrangements that allow a community-based youth program to offer the first certificate program while youth are still working to get their GED or high school diploma.

Workforce Investment Boards (WIBs) can make critical contributions by providing labor market information and expertise. They can advise community colleges on which sectors or occupations within sectors are most in demand and help staff decide on the design or expansion of specific career pathways. Strong WIBs, as well as other public and private agencies and funding institutions, can play intermediary roles with partners in career pathway (and on-ramp) program development and provide resources to bring partners to the table to undertake this work.

Labor unions and employers are also vital partners. Labor unions can provide access to apprenticeship programs and offer a deep understanding of job opportunities and pathways for workers. Employers and labor union leaders can advise both pro-

### AFL-CIO Building Trades Multi-Craft Core Curriculum

In 2007, the Building Trades National Standing Committee on Apprenticeship and Training identified courses in all building trades’ apprenticeship programs that are offered in common without regard to a particular craft, basically a common core curriculum. The courses are: general orientation to apprenticeship; cardiopulmonary resuscitation (CPR) and first aid; the OSHA 10 hour certification course; blueprint reading; applied mathematics for construction applications; history of the construction industry and the heritage of the American worker. The total core includes 120 hours of classroom training. Forty additional hours may be added by particular crafts as a pre-condition to earn credit for the program. The Core Curriculum, developed by the AFL-CIO’s Building Trades Department, is designed to provide a gateway to postsecondary education and careers in any of the Building Trades from high school or community college to joint industry registered apprenticeships.<sup>22</sup>

grams and community colleges on curriculum, ensuring that key technical skills are the central focus of readiness experiences and postsecondary programs of study. Employers can specify which credentials have value in their workplaces. Employers are also important in that they can provide a range of on-the-job experiences, from short term job shadow experiences to internships and access to entry level jobs. And of course, employers serve as the source of permanent, career-track positions for youth upon attainment of the requisite credentials.

## SUCCESS STORY



### Reconnecting via Green Career Pathways: Profile of **Yesenia Ramirez**

**CURRENT JOB:** Solar Installation Technician

**FORMER PROGRAM:** Los Angeles Conservation Corps (Los Angeles, CA)

Yesenia Ramirez dropped out of high school because “school wasn’t for me” and she needed a job to help support her family. A friend introduced her to the Los Angeles Conservation Corps (LACC).

Yesenia planted trees; worked in recycling; assisted with trail maintenance; Brown-fields mitigation and weatherization; earned Asbestos, HAZMAT, Confined Space, CPR, First Aid, Weatherization, and 30 hour OSHA certifications; and earned her high school diploma.

As part of her LACC training she received on-the-job solar installation experience with a nonprofit, Grid Alternatives, and attended federal ARRA-funded weatherization and solar installation classes at Los Angeles Trade Technical College (LATTC). She worked on a solar installation project with PermaCity Solar at Obregon County Park and ultimately was hired into a permanent position with PermaCity Solar as an installation technician, currently the only female technician working as an installer for the company in Los Angeles.

Yesenia is taking online classes through her employer and will work toward a degree at LATTC. Yesenia now has a much different feeling toward education: “School is everything.”

## The Framework

As discussed above, building strong career pathways within the growing green sector is a new effort which is emerging in different communities and regions. It is clear that connecting young people to green careers will generate benefits for multiple stakeholders. It is also clear that both building the pathways and enabling disconnected youth to access the pathways is complex work. This paper presents a multi-part Green Career Pathways Framework offering guidance to innovators seeking to link low-income, disconnected youth with the growing number of green jobs our country will need to fill.

The Framework does not promote a green job training program or collection of programs. Instead it provides a template for program leaders on linking to green career pathways work that is underway in their localities and preparing youth to connect with those pathways. The Framework draws on effective practices from the fields of youth development, workforce development and alternative education; research and practice on readying youth for postsecondary education and training and helping them persist once there and experiences from the burgeoning areas of green jobs training and eco-literacy. The Framework is designed to help programs align with the academic, technical and professional skills and credentials required by industries

with available green jobs. The Framework also emphasizes strategies for working with partners to ensure that youth are ready for postsecondary programs of study and have the necessary supports to persist once they enroll.

As illustrated in Figure 1, the Framework has the following elements:

1. **Ensuring Credentials Have Labor Market Value** — approaches for linking with industry and postsecondary partners to understand green jobs demand as well as the training most likely to connect youth to green career pathways.
2. **On-Ramp Model** — a program design that enables disconnected youth to develop the skills, experiences and postsecondary credentials they need to access green careers. The Model has three phases:
  - a. **Phase 1: Enriched Preparation** — activities that develop youth skills and experience to ready them for postsecondary study and initial green jobs. Includes three key areas of practice:
    - i. **Integrated and Aligned Education/Service/Work**
    - ii. **Postsecondary Readiness and Exposure**
    - iii. **Youth Development, Leadership and Support**

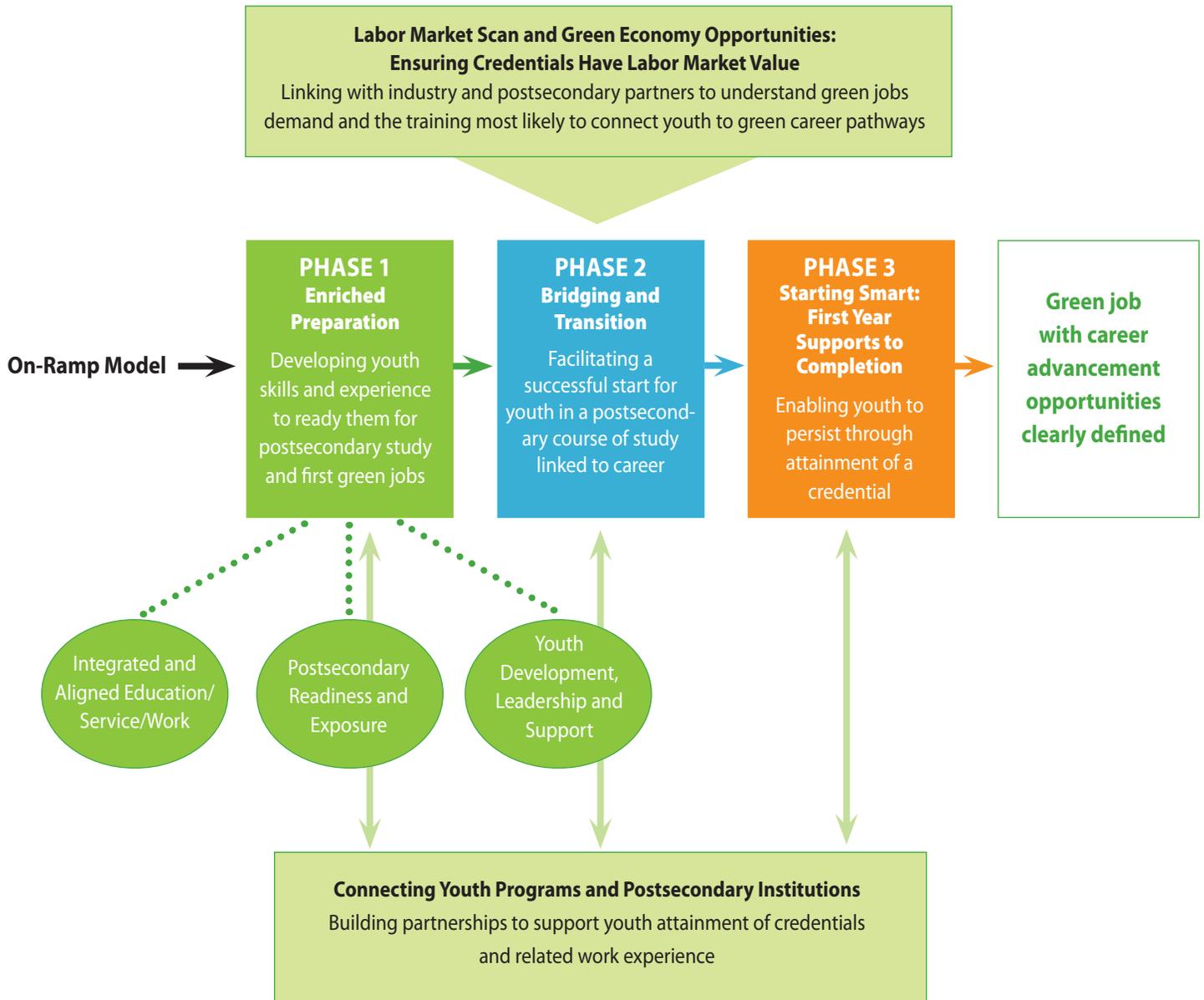
### PROGRAM IN ACTION

#### Stretching Green Pathways from the Campus to the Forest in New Mexico

The Rocky Mountain Youth Corps (RMYC) in rural Taos, New Mexico engages low-income, disconnected young men and women in two green job training areas. Green Crews, working with community partners, perform energy audits and complete weatherization projects. Meanwhile Environmental Restoration Crews are involved in the Forest Service's Collaborative Forestry Restoration Program. In both programs, hands-on service/work experience is combined with community outreach and education.

Partnership with the University of New Mexico at Taos (UNM) encourages Corpsmembers to complete secondary education — and gives them, often for the first time, access to college. An individually-tailored education program (RMYC's Learning Lab), strong connections with UNM, and strategies that actively promote a college-going culture have improved the Corps' GED attainment record. Learning Lab staff, trained by UNM and designated as adjunct instructors, incorporate competency based learning experiences into service/work projects. College credits attained in Corps combined with the AmeriCorps Education Award have greatly increased the number of Corpsmembers entering college.

**FIGURE 1**  
**Green Career Pathways Framework**  
*Postsecondary and Career Success for Low-income, Disconnected Youth*



- b. **Phase 2: Bridging and Transition** — activities that facilitate a successful transition for youth into a postsecondary course of study linked to the desired green career.
  - c. **Phase 3: Starting Smart: First Year Supports to Completion** — activities that enable youth to succeed and persist in the critical first year of postsecondary study and through attainment of the desired credential.
3. **Connecting Youth Programs and Postsecondary Institutions** – strategies for building the necessary partnerships between youth programs and postsecondary institutions to support youth attainment of credentials and related work experience through the On-ramp Model.

Next, the paper details each element of the Framework. Figures 2-5 illustrate the elements.

## Ensuring Credentials have Labor Market Value

### Exploring Local Pathway Development Work

Youth programs seeking to link youth to green jobs need up-to-date information on whether their community or region already has efforts in place that are establishing pathways for workers to green careers. As described above, many local employers face a lack of trained workers to fill their emerging skill or job demands. These employers may be exploring the use of emerging credentials developed by national partners they are affiliated with and trust. Or they may be developing local certificates or adding green elements to certificates in more traditional fields. Where there is demand, postsecondary partners may be active, working closely with industries to create new or retool existing pathways. This work helps ensure that postsecondary courses of study train participants for the right jobs and that students exit programs with the requisite skills needed to enter and advance in in-demand fields. A variety of industry, education and/or workforce organizations may be involved in making pathways more transparent, adding “stackable” certificates that help workers increase their skills and advance, and providing more information about what it takes to succeed in these newly emerging industries.

The next section of the paper outlines a set of questions that partners in a community need to address in order to inform the need for new career pathways and create responsive

postsecondary technical courses of study. It suggests how and why youth program leaders should connect to this work locally so they can retool existing programs as effective on-ramps for youth to green and other growing industries.

### What is the Demand for Green Jobs in the Community or Region?

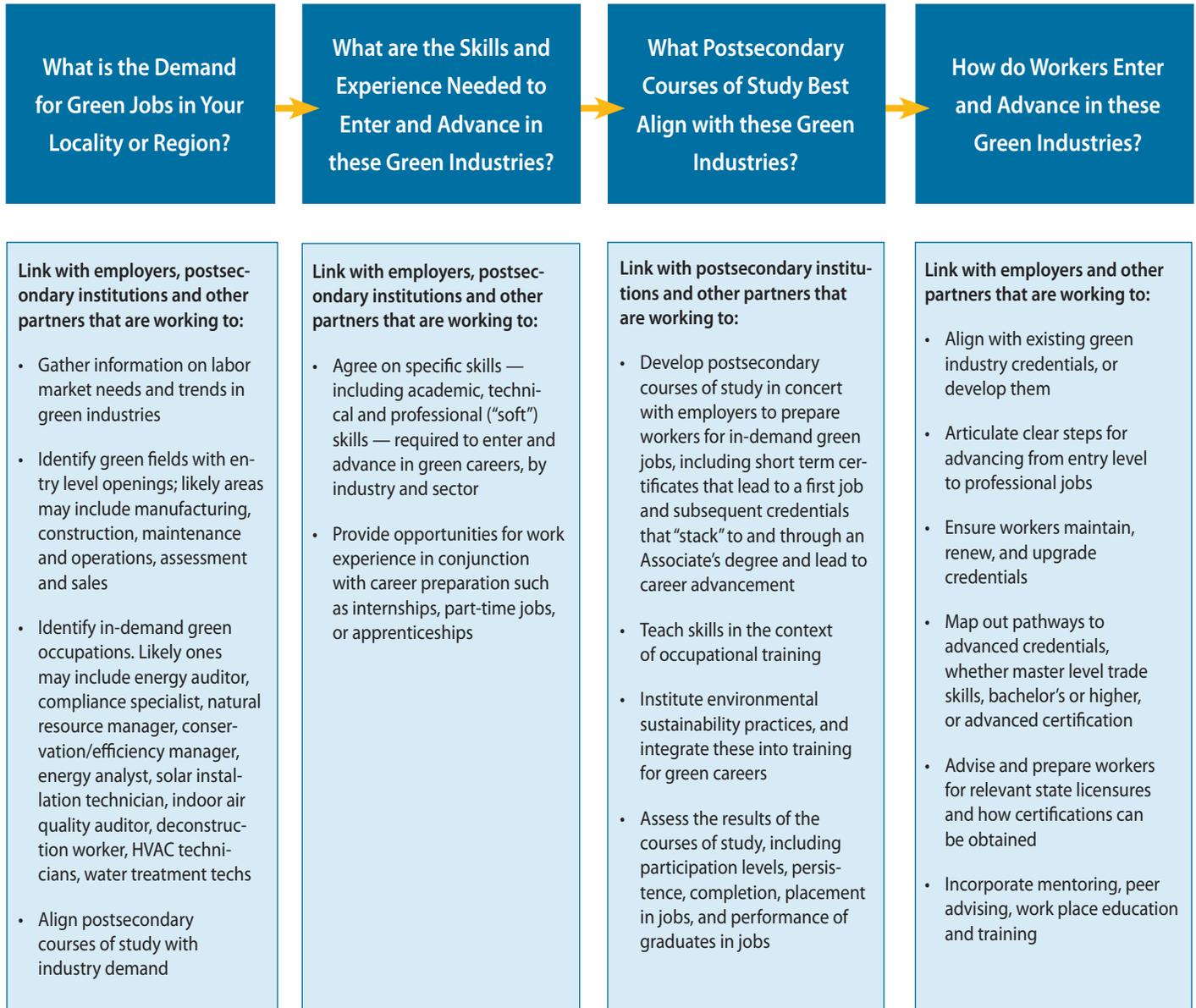
#### *Determining Labor Market Demand for Green Jobs and Aligning Training with Skill Needs of Employers*

Usually the development of new credentials (or the addition of green specialties to existing, more traditional credentials) occurs because of growing labor market demand for these jobs. However, the field and local economies can change rapidly; for example, in some areas the recent economic downturn derailed what otherwise looked like promising labor market opportunities. Key partners, including community-based youth programs and other education and training providers, must keep their fingers on the pulse of the labor market. Employers, and those that work most closely with them, are in the best position to advise on what credentials are actually in demand, which credentials are most trusted by industry and which of the new green credentials are actually most responsive to the industries in the region. In some localities, partners convene employers on a regular basis to keep track of job demands. In other areas, Workforce Investment Boards (WIBs) look regularly at labor market information (both national data from the Bureau of Labor Statistics and more current real time labor market information where available) to track changes in the labor market. Where this work is happening on an ongoing basis, all parties can better understand where there is unfilled demand (in what sectors) and what green jobs are actually growing in the area.

Unfilled demand should drive the refocusing or development of technical training programs at postsecondary institutions and in the community. Partners doing this work effectively use demand information to work with employers on the actual skill requirements needed to access green jobs (and advance in the particular industry sector). Then, postsecondary institutions design training programs that ready participants to enter those fields at entry level (or above). Certificates needed to enter or advance can be “assigned” to differing levels of technical

FIGURE 2

**Ensuring Credentials have Labor Market Value**  
*Exploring Green Career Pathway Efforts in Your Locality*



study, whether short term or Associate’s degree programming or beyond. When carefully and responsively crafted in conjunction with industry, employers will trust the providers and hire employees when they complete the requisite program, earn the certificate and are ready for job placement. The most effective technical training programs are predicated on labor market demand; teach skills and offer certificates that are valued by employers and have strong job placement outcomes once participants complete the program.

It cannot be overstated that when training is well-aligned with in-demand jobs, all parties benefit — education providers, employers, and participants. Examples of this work (and the multiple benefits) abound. For example, the Ohio Department of Natural Resources (ODNR) used American Recovery and Reinvestment Act Funds to create the Ohio Woodland Job Corps through its Division of Forestry. A \$15 billion wood industry in Ohio offered job opportunities in logging, forestry, and conservation-related positions. With high unemployment throughout the state, these industries provided opportunity for students and families, helped fuel economic development and responded to the need for a trained workforce.

In conjunction with Ohio State University, two cohorts of over 60 participants each were enrolled for six month terms of service. Credentials included a pesticide applicator’s license, wildland firefighter certification (red cards), first aid certification, and a Master Logger equivalency certificate. While in training, youth removed invasive species in Ohio’s forests and maintained and established new trails. Through a partnership with the Corporation for National and Community Service and The Corps Network, participants qualified for AmeriCorps Education Award scholarships they could use to support their further education.

Dan Balsler, Acting Assistant Chief of Forestry, stated that this Corps work was “really about improving the business climate in Ohio in terms of conservation jobs.” Nearly 2,500 people applied for the 130 slots available in the Corps, clearly demonstrating need. Among the first cohort of 62, 53 remained in touch with ODNR. Of those, 35 are employed, 16 went back to or started college, and two entered the military.

### Industry and Corps Partner for Energy Smart Jobs in California

With funding from the American Recovery and Reinvestment Act (ARRA) through Energy Upgrade California, PECL, a leading provider of energy efficiency solutions in California and throughout the western United States, initiated the EnergySmart Jobs Program to employ Californians throughout the state by delivering refrigeration and associated retrofit measures that save energy in commercial facilities. The program will create more than 200 new jobs, provide energy efficiency training to 400 people, and help retain more than 200 contractor and energy surveyor positions. The California Conservation Corps (45) and the Los Angeles Conservation Corps (60) will supply trainees as new direct employees to meet the energy survey needs of the program. Corps will field small crews of trained energy auditors. Crews will be issued smart phones with built in audit applications to assist in their activities. With the training and experience, Corpsmembers will become eligible for employment by participating contractors.

### What are the Skills and Experience Needed to Enter and Advance in these Green Industries?

#### *Building Industry Partnerships that Foster Mutual Understanding of Skill Requirements and Opportunities for Work Experience*

It is important that local partners involved in the work of building pathways to green careers understand the specific skills needed to enter and advance in green jobs fields. These skills should be well articulated so all parties have a clear and consistent understanding of the full set of skills needed to enter and advance in these industries. Often this work is done through extensive employer interviews to elucidate the key academic, technical, and professional skills needed first for entry and then to advance to succeeding levels within the industry.

Professional skills — often termed “soft” skills — have been identified in numerous higher education and industry studies (such as the survey of over 400 employers analyzed in *Are You Really Ready to Work?*<sup>23</sup>) as critically important to the success of

new entrants to the workforce. These skills center on development of a strong work ethic; oral and written communication; self-advocacy and efficacy; and teamwork and problem solving. Among these studies, the pioneering effort of the Secretary's Commission on Achieving Necessary Skills (SCANS) identified a set of critical workplace competencies that youth need to find and hold a good job (see box for detail).

Before becoming too highly specialized, youth should gain the "foundational" skills that will enable them need to succeed at the entry level and position them to grow into higher-skill, higher-paying jobs through work experience and further training. Depending on the industry, "foundational" skills normally include a specified level of reading and mathematics competency; some degree of proficiency in the professional or "soft" skills

### **Secretary's Commission on Achieving Necessary Skills 2000: Workplace Skills and Competencies** <sup>24</sup>

#### **Foundation Skills**

*Basic Skills:* reads, writes, does math, listens and speaks well

*Thinking Skills:* thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reason

*Personal Qualities:* displays responsibility, self-esteem, sociability, self-management, integrity and honesty

#### **Competencies**

*Resources:* ability to identify, organize, plan and allocate resources

*Information:* accessing and evaluating data, organizing and maintaining files, interpreting and communicating ideas, computer literacy

*Interpersonal:* accessing and evaluating data, organizing and maintaining files, interpreting and communicating ideas, computer literacy

*Systems:* understanding social, organization and technological systems

*Technology:* selecting equipment and tools, applying appropriate technology to a given task

noted above and ability to perform a set of basic technical functions. These fundamentals will apply even as technology evolves. For example, knowledge of how to operate a wind turbine is not a prerequisite for an entry technician in wind energy, but the technician must be proficient in the basics of power generation, electricity, and function of electrical components. The knowledge of skill requirements for the industry helps youth program staff better prepare youth for further education and training and advise youth on what skills are most in demand.

Input from employers and labor unions can inform what foundation skills are most necessary to enter and succeed in the identified industries and give valuable feedback on how well entry level employees are prepared to do their jobs. Industry has a strong stake in helping all education and training institutions understand how to help develop a talent pool of workers prepared to fill existing and future openings. Engaging employers and labor unions in shaping and reviewing curriculum and hands-on projects enables providers to align their program activities to what employers are looking for and what foundational skills employees may typically lack.

Partnerships with employers and labor unions can also help build a pool of internships, apprenticeships and on-the-job training opportunities for young people in on-ramp programming and in postsecondary programs of study. These opportunities help youth apply their academic, technical and professional ("soft") skills training in a real work environment and give participants the chance to gain the job experience often needed to qualify for entry level positions in the industry. These first job experiences also give employers a chance to try out potential new employees. Through internships or part-time work youth are able to receive guidance and mentorship from professionals in the trade, and develop an understanding of the culture and the professional norms that apply to the selected occupation. Participants acquire work experience while establishing the professional relationships that open doors to longer-term employment. Earning income from part-time work early on in the program and sustaining this work in the chosen career field can also help youth persist in postsecondary education, since many of these youth must financially support themselves and their families. An effective green pathway should include "learn and earn" opportunities to provide wages while preparing for college

## PROGRAM IN ACTION

## Non-traditional Industry Partnership in Ohio

Ohio's WSOS Quilter Conservation Corps created a partnership with water plant superintendents who serve as trainers in water management. Initially, success was limited but it improved with experience and more careful selection and preparation of participants. Classes were small. Seven of nine Corpsmembers passed the state EPA test (78%) and got jobs that required EPA certification. The Corps has been asked to expand the training.

"Normally," says Employment and Training Supervisor Roger Fisher, "someone's an operator-in-training for a year, doing 2,080 hours of on-the-job training — and the passing rate for that training is 48 percent. So I think our passing rate reflects both the high quality of the training and commitment of our trainees."

and during postsecondary study, preserving any necessary financial aid for courses leading to the degree or certificate.

Like all stakeholders, employers and labor unions face challenges that pose limitations to their level of involvement in the development and implementation of green career pathways. Industry partners gain confidence that local programs and postsecondary training programs will prepare and refer youth ready to succeed in internships, apprenticeships and full-time employment opportunities if involved in the work of reviewing or creating training curricula and preparation experiences that align with industry needs. For the employers, the cost-benefit analysis always involves balancing the immediate cost of co-developing training or supporting an intern or apprentice against the longer-term investments of ensuring an adequate and skilled workforce.

### What Postsecondary Courses of Study Best Align with these Green Industries?

#### *Delivering Learning and Skill Development in Postsecondary Institutions via Industry-Defined Career Pathways*

Ensuring that credentials have labor market value also involves the development of responsive postsecondary career pathway programming. Community colleges, universities, and other instructional institutions are increasingly developing new green pathway programs or adding green specialties to more traditional certificate programs working closely with local or regional employers around the country.<sup>25</sup> Good pathway design ensures that technical course offerings are consistent with industry and overall labor market needs.

A number of community colleges that have developed green pathway programs have also made sustainability practices priorities of their institutions, and integrated those practices into training to offer students a "living laboratory" for hands-on learning. A recent report from the National Council for Workforce Education and the Academy for Educational Development, *Going Green: The Vital Role of Community Colleges in Building a Sustainable Future and Green Workforce*, profiled a number of these initiatives. For instance, Wake Technical Community College in Raleigh, North Carolina, established the first all-LEED campus in the nation at its Northern Wake site. At Wake Tech, "the college's construction management associate degree program uses its Northern Wake Campus as a lab setting where students learn both conventional building methods and materials, and those elements of sustainable construction that have helped Wake Tech earn LEED certification."<sup>26</sup>

The work of community colleges in this arena provides opportunities for community-based youth programs to connect with and provide entrants for emerging green (and other in-demand) pathways while offering key supports for their participants. According to a Workforce Strategy Center (WSC) report, *Building Effective Green Energy Programs in Community Colleges*:

Community colleges are grappling with how training programs for green jobs can create upward mobility for low-skilled individuals. Some are attempting to create green energy career pathways but are having difficulty identifying the target occupations, skill needs, and training when so little is known about the green energy demand for entry-level workers. Others are struggling with how to provide real-life learn-

ing experiences for students, such as internships, to provide them with job experience. Still others are finding it difficult to retain disadvantaged students who must overcome financial and social barriers to stay in school.<sup>27</sup>

The WSC report emphasizes the importance of partnered connections between colleges, industry, and the broader community. The report highlights a number of success stories, including the Renewable Energy Technology Program at Columbia Gorge Community College in north central Oregon.

[The Program] is the direct result of conversations between the college and industry after entrepreneurs began opening wind farms in the region. Following a needs assessment, the college offered a pilot curriculum as a six-month non-credit program in January 2007. By September 2007, the college had created a one-year certificate (51 credit hours) and a two-year Associate of Applied Science (AAS) degree (100 credit hours). The college meets twice a year with industry representatives to assess course offerings against industry needs as they transpire. It is also in the process of completing a second needs assessment to determine if the skill needs have changed.<sup>28</sup>

Once pathway programming is in place, postsecondary staff, with employer partners, should create feedback loops to look at performance data in an ongoing way. Information about student readiness and overall participation rates, program persistence and completion, job placement outcomes and the degree to which new job entrants are considered prepared for their jobs is critical information to inform the effectiveness of the pathway and provide information to help partners make necessary adjust-

ments to the course of study. Transparent information on the elements and effectiveness of the postsecondary courses of study is important for youth programs to have in hand. This information will help program staff assist youth to choose a course of study with strong odds of completion and an immediate labor market pay-off.

## How do Workers Enter and Advance in these Green Industries?

### *Advancing Workers and Training to Industry-Based Certification and Credentialing Systems*

Some of the best career pathway programs offer an accelerated first technical program that results in a certificate connected to a pathway of additional, “stackable” certificates to help workers acquire increasingly sophisticated skills and move up in the industry. Once students have a first credential in hand and a good first job, they can connect to further training, test for higher levels of certification and access better jobs. The work of delineating multi-step pathways within green or other in demand areas (and associated credentials) is currently taking place within postsecondary institutions that link closely with employers to understand the skill demands of the various professional levels of a particular pathway.

For example, Los Angeles Trade Technical College (LATTTC) and Trident Technical College (Trident Tech) in North Charleston are working with local and regional employers to better understand what green careers exist. Among the many challenges is decoding job titles — in this emerging industry, different names for jobs can hide the fact that the companies are looking for virtually identical qualifications and roles. LATTTC has developed a

### **SEED: Helping Community Colleges Lead in Green Practices and Training**

Developed by the American Association of Community Colleges (AACC) and ecoAmerica, the SEED (Sustainability Education & Economic Development) Center is designed to support and inspire all community colleges to become leaders in encouraging sustainability practices and preparing students and workers for careers in high-growth sectors of the emerging green economy. The Center includes a resource portal of free curricular development tools and promising practices as well as opportunities through webinars, workshops, and other vehicles, for colleges to share and exchange ideas. With nearly 400 college members today, SEED is a growing force. SEED was initially supported through grants from the Kresge and Surdna Foundations.

stackable certificate and degree program that provides students an easily understood Green Career Pathway. The first certificates in the “stack” are considered “fundamental,” documenting that an individual has obtained basic knowledge, skills, and abilities. The second level, “core technical” certificates, demonstrate that an individual has obtained relevant skills to a specific occupation. It is generally tied to at least one industry-recognized credential. An Associate’s Degree is the third level of the stack, and provides individuals with more advanced skills for higher-level management positions. It is also tied to a higher-level industry credential, such as a BPI Building Analyst certification (a certification that allows individuals to independently conduct energy audits). Should they continue Associate’s Degree graduates are well on the way to a four-year university degree.

Knowing more about credentialing and the pathways to advancement allows youth programs to help young people take the first step on the career path.

When postsecondary partners understand the skills required at various professional levels within an industry, they can coordinate a series of academic, technical, and on-the-job training experiences that prepare participants to take, and pass, credentialing exams developed by a certifying body. These types of credentials (such as those offered by the Building Performance Institute/BPI, North American Board of Certified Energy Practitioners/NABCEP, or Residential Energy Services Network/RESNET) do not just include technical skills. They also gauge whether workers can assess and solve problems, translate written instruction into action, and explain completed work in a manner understood by colleagues at different levels of expertise as well as by the consumer. The exams require comfort and skill in test taking and often use complex word and situational problems that require a high level of proficiency in reading, comprehension, critical thinking and analysis.

Knowing more about credentialing and the pathways to advancement allows youth programs to help young people take

### Green Pathways in Manufacturing

The National Association of Manufacturers (NAM) has recognized that multiple pathways in the Advanced Manufacturing economy include green jobs. Manufacturing represents some 12 million jobs in the United States, and these range across 14 sectors. Green jobs include: (1) those directly related to increased energy efficiency and renewable or “clean” energy sectors; (2) those providing the technology to “lean and green” other business sectors such as agriculture; and (3) those in the manufacturing product lifecycle that require “green” competencies related to the “making” of products and reducing waste/costs, ranging from materials procurement through distribution of product and re-manufacturing.

Accordingly, NAM has incorporated “lean and green” competencies into the NAM-Endorsed Manufacturing Skills Certification System, a system of stackable postsecondary credentials applicable to all sectors in the manufacturing industry. The System’s nationally portable, industry-recognized credentials validate the skills and competencies needed to be productive and successful in entry-level positions in any manufacturing environment. The System includes the “lean and green” competencies among its foundational skills for all jobs in Advanced Manufacturing, which are aligned with a number of educational and career pathways. Four states (Ohio, North Carolina, Texas and Washington State) are piloting the deployment of the System, and 25 states have engaged in strategic planning for deployment.<sup>29</sup>

the first step on the career path. For example, initial credentialing can be offered in a variety of ways that make these first credentials more accessible and attainable. Some beginning credential programs are offered online; in other cases they are offered on the youth program site, taught by college faculty or a program staff with adjunct status. Of course, in some cases, credentialing exams need to be positioned later in the pathway (for example, after the first year of postsecondary study) so participants have

## SUCCESS STORY



### Reconnecting via Green Career Pathways: Profile of **Will Waters**

**CURRENT JOB:** Trail Ranger, Skyline Wilderness Park,  
Napa County Parks and Recreation

**FORMER CORPS PROGRAM:** Conservation Corps North Bay  
(San Rafael, CA)

Will Waters attended six high schools before dropping out. His parents had recently divorced and each moved to different areas of California. Conservation Corps North Bay (CCNB) provided Will with the alternative he needed. It not only allowed him to

work in the field (working with his hands is something Will values) but also gave him the opportunity to earn his high school diploma.

Will became both the Corps' Field Education Facilitator and Assistant Crew Leader, in addition to acquiring Sawyer I, II and III certifications, as well as Chipper, CPR and First Aid certifications. His professionalism, attention to detail and safety-consciousness were noticed by field supervisors of project partners, including the Sonoma County Water Agency. The Agency subsequently hired Will as a seasonal biologist/program assistant. As a result of his strong performance, he secured a permanent position.

Will is currently a Trail Ranger at Skyline Wilderness Park, part of Napa County Parks and Recreation. He works 25-30 hours per week, patrols 24 miles of trail, repairs trail, constructs bridges, enforces laws, and performs other duties.

Will continues at Santa Rosa Junior College, increasing his ability to advance his career. He is taking Math, Speech, and Fire Technology classes and will receive certification for Fire Fighting, both as a traditional structural firefighter and as a wildland firefighter. He ultimately would like to transfer to a university to earn a bachelors degree in biology or natural resource management.

gained the functional work experience and have the requisite academic skills that facilitate successful outcomes on the exams.

As youth work on building skills for the first job, it is important that they understand the steps needed to advance in the industry over time. Employers and postsecondary staff are the front-line partners in the work of mapping out clear steps (including certification and licensure requirements) for advancing from entry level to professional jobs. Youth programs should familiarize themselves with these progressions so they can ensure that youth are informed about and poised to advance. Staff in postsecondary institutions and employers in the industries should encourage young people to keep moving on the career ladder, helping youth access more education and training and plan for ongoing certification and skills upgrading. Industry mentors and peers working in the industries can also help youth gain understanding of requirements and ongoing opportunities in the career field.

### Implications of Credentialing and Career Pathway Work for Youth Programs

The previous discussions synthesize lessons from communities that are developing new green pathways, adding green specialties to existing certificate programs or generally revisiting their technical training offerings to ensure that they meet current employer and workforce demands. Community-based youth programs can benefit from exploring and connecting to this work in the community in a number of ways. First, learning more about labor market demands and trends helps program staff provide better guidance to youth as they explore careers and begin to focus their interests and goals. Second, becoming knowledgeable about the postsecondary technical courses of study that are producing the most immediate labor market pay-off has implications for focal areas of service and work projects within youth programs as well as for the kinds of skills youth need to develop to be ready to enter postsecondary. Finally, being savvy about the steps of various career pathways helps youth programs — with key partners — to build strong on-ramp programs and work with youth within a longer trajectory so young people are informed about, encouraged and provided support to continue their education and skills development and access jobs that offer good professional growth opportunity.

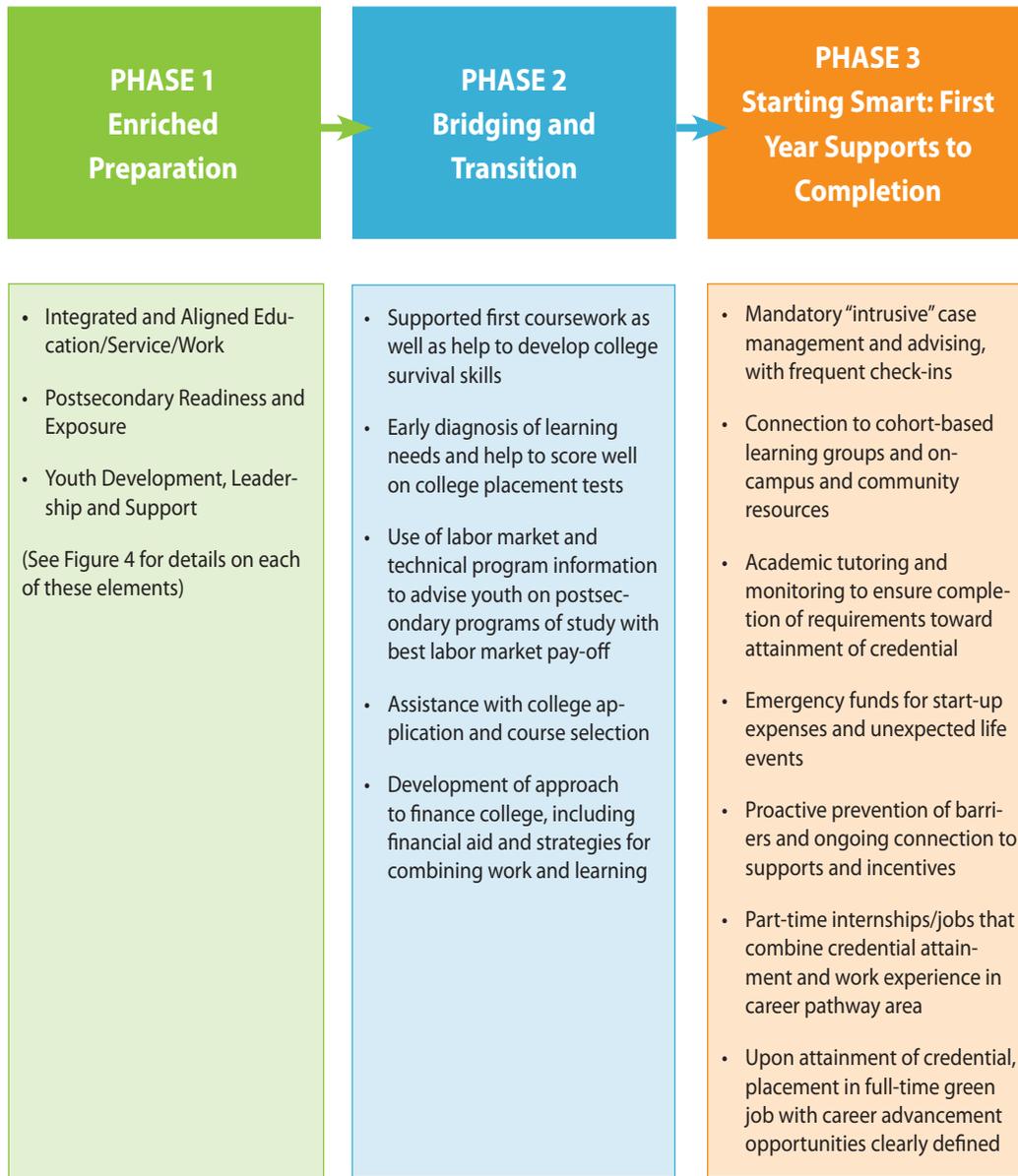
Exploring and connecting to career pathways work not only builds confidence that pathways are real and have advancement potential, it also enables programs to find those partners with focused commitment and energy that can help open doors to postsecondary institutions and to businesses.

Career pathway work in a community or region is, in fact, a prerequisite for building an effective on-ramp to postsecondary study and in-demand jobs. Aligning existing youth programs to a real pathway is not really feasible if practitioners cannot link to existing career pathway efforts in the community or region. Fortunately this work is high on the radar screens of most states and is central to current economic recovery efforts. While green careers or credentials may not yet be emerging in some localities, practitioners can start by connecting to more traditional industries that are currently in demand. To the extent that youth programs involve their participants with new green skills (energy auditing, for example), these youth then bring specialties to the existing jobs in traditional industries and may, in fact, improve their employability prospects.

### The On-Ramp Model: Connecting Youth to Green Career Pathways

When youth programs are able to connect to, learn about and partner with local career pathways efforts as described above, it becomes possible to build an effective on-ramp for disconnected youth to green careers. Once programs understand the credentials that employers demand, the academic, technical and professional competencies needed to enter and then access each rung of green career ladders in the community and the skills needed to enroll in postsecondary study ready to succeed, programs can then properly align the education, work and service activities they offer to youth. While help from partners is critical, programs must determine what work they need to do internally to construct an effective on-ramp. A program may find that, in order to truly ready its youth for a successful transition to postsecondary courses of study related to green careers, it needs to enhance one or more programmatic areas such as the length and intensity of its services; the mix or rigor of its academic and technical training; the methods it uses for helping youth explore, plan for or experience work and careers; or the ways it helps youth choose from postsecondary options or negotiate the

**FIGURE 3**  
**On-Ramp Model**



environment and expectations of postsecondary.

The work of adjusting a youth program to ready youth for postsecondary study may seem overwhelming, but programs around the country have begun to set priorities for program improvement and adopt approaches that are working.

To guide programs (and their partners) as they determine the best ways to align their approaches to green career pathways, this paper offers an aspirational “college connected” model for programs seeking to create an on-ramp to postsecondary programs of study. This model, adapted from a Jobs For the Future design which was informed by experiences with the Bill & Melinda Gates Foundation funded Postsecondary Success Initiative,<sup>30</sup> consists of three programmatic phases, outlined in Figure 3 — Enriched Preparation (aligned work, education and service activities that ready youth to succeed in postsecondary programs of study related to green careers); Bridging and Transition (dedicated time for young people to take on their first supported “college level” work and also build self-advocacy and other college knowledge skills necessary for success); and Starting Smart: First Year Supports to Completion (case management and other academic, financial or personal supports that enable youth to persist and complete their selected program of study).

It is important to note that this on-ramp model is intended to provide guidance for programs — it represents a goal that programs might aim to work toward, and is not meant to signal that many current programs have most or all aspects of the design in place or even in current consideration. However, a growing number of programs have found success in applying key aspects of the model to better align their academic, work and service activities with postsecondary courses of study, and to work with postsecondary partners to add new components to existing programming. The paper presents and details each component of the model, including suggestions and examples of how some youth programs are strengthening their designs and leveraging resources with the help of key partners.

### Phase 1: Enriched Preparation

The on-ramp model begins with an enriched preparation phase. This can be the most challenging phase for programs to redesign and implement. Enriching the preparation of youth participants requires that staff align academic, work and service components

with the skills needed to enter postsecondary programs of study ready to succeed without remediation. This work cannot be done well without the active help of a postsecondary partner (and perhaps key employer partners). Postsecondary staff and employer input into the curriculum and key activities of the preparation phase ensures that the program is teaching the right mix of academic, technical and professional skills necessary to enter postsecondary study ready to succeed. Adding new or additional skill requirements to the program means that these skills need to be well integrated into program activities and carefully assessed. Many programs find that adding additional skill development means they need to lengthen the program stay for youth, perhaps by adding a summer of study or even an additional half-year. Of course, lengthening a program has resource implications that need to be addressed.

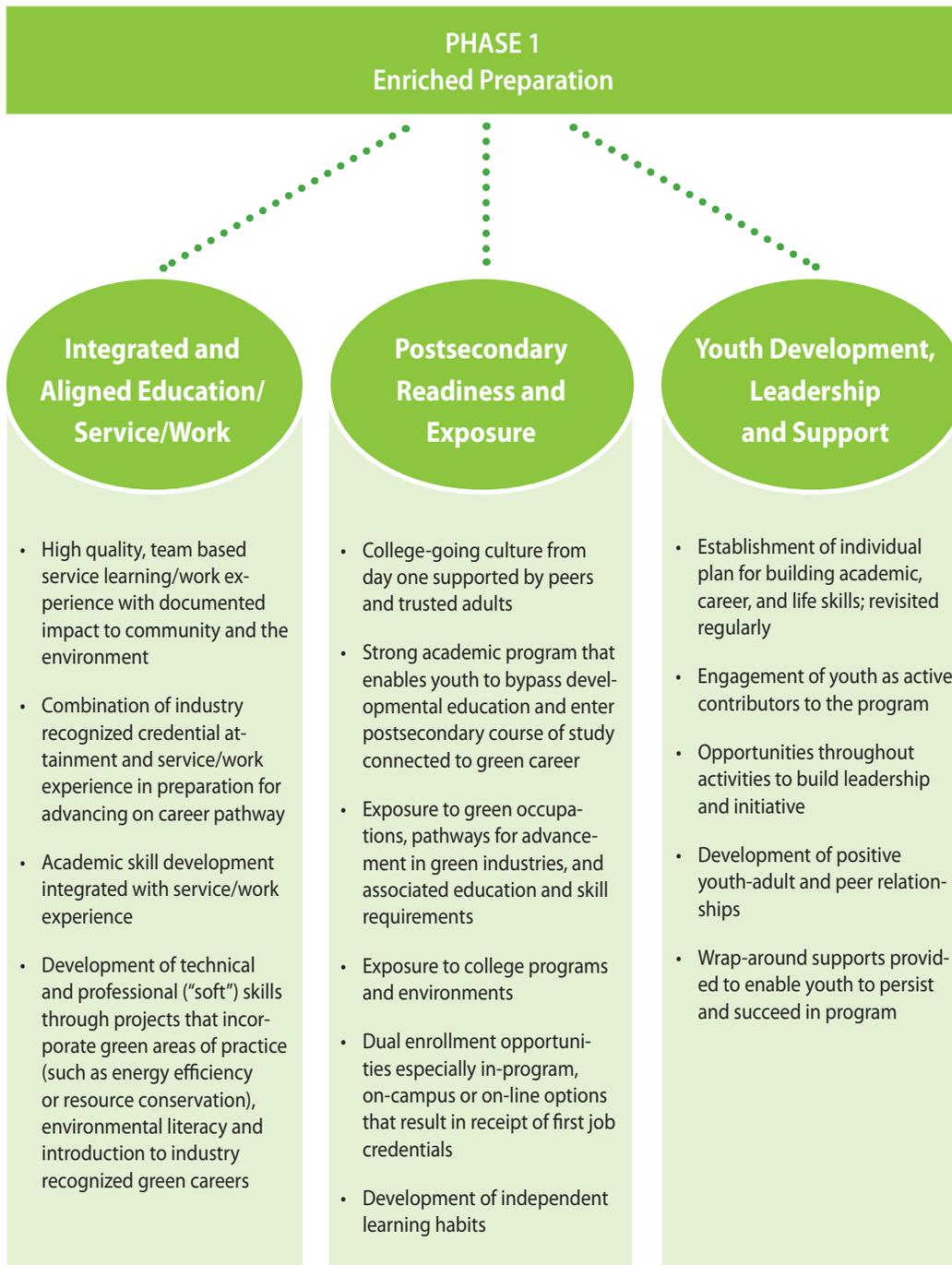
Figure 4 outlines the Enriched Preparation approach for youth programs. This design (drawn from sources such as The National Youth Employment Coalition’s PEPNet quality standards, The Corps Network’s Excellence in Corps Operations/ECO standards, and the Postsecondary Success Initiative described above) includes three areas of program development and design work:

- **Integrated and Aligned Education, Service and Work:** building academic, technical and professional (“soft”) skills in the context of applied learning and actual work experiences and aligning the skills with entry requirements for postsecondary courses of study and first jobs.
- **Postsecondary Readiness and Exposure:** helping youth prepare for postsecondary study and culture so they enter college ready to succeed.
- **Youth Development, Leadership and Support:** incorporating youth development principles and providing wrap-around services to ensure a powerful program experience and supports necessary for youth to complete the program and take the next step.

#### *Integrated and Aligned Education/Service/Work*

Service learning and community service have become increasingly recognized as an effective means for young people to develop academic, technical, and professional (“soft”) skills and gain work experience. Youth in any type of program — not only programs with service as a focus — can benefit greatly from

**FIGURE 4**  
**Enriched Preparation: Detail**



team-based service/work experiences, which can provide a rich and authentic settings in which all can learn and grow. Those with low academic achievement records and complicated life experiences can quickly engage and service projects offer opportunities for early and positive reinforcement, sometimes for the first time in youths' educational careers. Service — whether volunteerism, community action, service learning, or simply helping a neighbor — is at the heart of American history and is a promising strategy for positively engaging low-income, disconnected young men and women.

The experience of Service and Conservation Corps — some in operation since the mid-1970s — has illustrated that effective service projects have several important components. They (a) require crews/teams to identify and work together to solve problems; (b) require participants to learn and practice applied academic and valued technical skills; (c) result in tangible, enduring community impacts and improvements; (d) serve as living

As innovative youth programs have discovered, creating an engaging, learning-rich and authentic service project is a good method for embedding and integrating challenging academic and technical skills and work competencies in a way that helps accelerate learning.

classrooms for lessons that incorporate skills development and exploration on issues of civic concern; and (e) enable both participants and communities to witness the real impacts of service and see young people as valued assets in their communities.

While preparation for green jobs is the focus in this paper, green jobs are not for everyone. It is imperative that young people have the opportunity to prepare for careers in their chosen areas of interest and passion, that they not be forced into a career path that is not of interest to them. Yet utilizing green projects such as

energy conservation and broader environmental stewardship can serve as a good foundation for learning and can help engage students, whatever their career interests, in interesting and relevant work in the community. These projects introduce youth to basic eco-literacy concepts and skills and equip them with knowledge and know-how that allows them to be immediate resources to their families and communities. These projects also provide a good introduction to the world of green careers.

As innovative youth programs have discovered, creating an engaging, learning-rich and authentic service project is a good method for embedding and integrating challenging academic and technical skills and work competencies in a way that helps accelerate learning. Many youth programs still concentrate the bulk of their academic program on remediating skills deficits (often divorced from relevant contexts) or focus preparation on helping youth pass tests to get a secondary credential (diploma or GED). These approaches sometimes fall short of helping young people become ready to take the next step. The challenge is to bridge the preparation gap by offering college ready instruction, not just remedial skill building. Grounding academics in real life green service work (in areas such as energy efficiency, land conservation, or clean energy) provides both a meaningful academic context and also begins to ready and prepare youth for technical study and credentials that have growing value in the labor market.

Getting the right degree of academic and technical rigor is important for ensuring that these applied learning experiences truly ready young people to continue their education beyond a secondary credential. While short-term green job training programs may exist in many communities, they may be too often focused on immediate employment placement rather than building toward academic and technical proficiencies needed for successful entry to postsecondary education and training. Obtaining clear information from employer and community college partners on the full range of available credentials for green jobs, as well as the actual academic and technical competencies required for entry and completion, is an important and necessary step in ensuring that the green service projects (and the supporting or supplemental education services) prepare youth to enter postsecondary career pathway programs of study (new green credentials or traditional pathways that have

## PROGRAM IN ACTION

### Corps Network 2010 Project of the Year: Service and Solar in Los Angeles

In 2010, the Los Angeles Conservation Corps (LACC) joined forces with the Los Angeles County Department of Parks and Recreation, Los Angeles Trade Technical College (LATTC) and PermaCity Solar — designers and builders of renewable energy — to prepare low-income young men and women for employment in the solar industry and beyond. A 50 kilowatt commercial solar installation in Obregon Park in East Los Angeles served as the learning laboratory.

Over a two year period preceding the Obregon Park installation, building on a solid education, youth development and career preparation program, LACC developed comprehensive solar theory and installation training in collaboration with community colleges, government and the solar industry. Corpsmembers completing basic training at LATTC were eligible to be considered for job shadowing with the County of Los Angeles and their solar provider, PermaCity. Corpsmembers engaged in the design of the system, followed construction plans through the permitting process, and worked alongside certified and experienced solar panel installers throughout the installation process.

Prior to initiation of the project Corpsmembers went door-to-door in the community to introduce the project to local citizens and discuss its value. At the end of the project, they participated in hosting a Green Energy Expo in the park to educate residents about renewable energy and other “green” projects the county has planned for the park.

As a result of this project, the County of Los Angeles is pursuing funding to install similar systems in 10 additional parks, with partnership from LACC and local employers. In December, LACC completed a 410 kW solar installation at CBS Studios and is currently developing new solar installations at local Wells Fargo Banks and a multi-dwelling apartment site in La Puente in collaboration with a non-profit housing developer.

green specialties). Knowing this information helps programs embed the right skills into service projects and design the right academic content and supports. It also opens up opportunities to offer postsecondary certificate study when youth are nearing the end of the enhanced preparation offered by the program (but before they go into college bridge programming). Helping youth become certified before they enter bridging and transition activities sets them up well to access employment and be able to balance postsecondary study with a job in a career area of interest.

Integrated service/work projects also provide a powerful mechanism for helping youth develop the professional, or “soft,” skills discussed earlier in the paper, skills at the heart of college and career success. The very essence of service projects involves teamwork, problem solving, taking responsibility and other “SCANS” skills deemed critical today for thriving in postsecondary education and in the workplace.

Finally, service projects require the use of key college ready

instructional strategies such as collaborative group work, literacy circles, and writing activities that enable learners with diverse skill levels to support and challenge their peers. Purposeful questioning and opportunities to reflect on ones learning also help youth develop thinking, listening, speaking, and inquiry skills.

#### *Postsecondary Readiness and Exposure*

Programs creating on-ramps to green careers must establish an explicit college-going culture starting from day one. Innovative programs do this by delivering the message that college is the goal of the program and a diploma or GED is just one step along the way. This messaging starts at intake. It is formally introduced within a rigorous and/or extended orientation where the message of “college for all” is explicit and reinforced. Some programs hold orientation on the campus of their community college partner to ensure that the message is clear and students see themselves as “college material” from the start. Setting a strong college going culture involves ensuring that projects are challenging, expectations for performance are high and students

are guided to become independent learners. Many programs work to make sure that the program's physical set-up (e.g. setting up classrooms as work stations and employing technology to support project work) and artifacts (college and career posters, exhibitions of student work) broadcast the college going goals of the program.

Academics — both those embedded in the service projects along with online or supplementary instruction — must help youth develop the literacy and math skills they need to bypass developmental (remedial) courses and enter postsecondary institutions ready to take credit level coursework. Providing bridge programming, as discussed in more detail below, enables staff and partners more time to get this done. Still, programs need to ensure that substantial reading and writing takes place every day and that literacy and math activities are well integrated into project work. Most programs will need to focus on math instruction in particular, as many green jobs generally require competency in math (and college placement tests normally require competency in math concepts through Algebra I).

...programs need to ensure that substantial reading and writing takes place every day and that literacy and math activities are well integrated into project work.

Technological tools can provide skill-building support and facilitate “anytime, anywhere” learning to supplement service project or direct classroom instruction. Programs should use regular assessments, including college placement exams, to diagnose students’ specific learning needs and customize instruction so students can rapidly develop the exact skills they need to move through the preparation phase and get ready for postsecondary study. Programs should coach and support youth in using time outside the program to accomplish learning goals and develop independent work habits that will serve them well when they move on to postsecondary study.

Youth should have multiple opportunities to explore careers (both through service and work projects and other program activities). This exploration should take into account youth career aspirations as well as information on labor market demand to help youth determine what postsecondary courses of study will be the “best bet” for them. Youth should be carefully guided to the postsecondary programs most likely to fit with their interests, situations and career interests. Staff should be well versed in the technical courses of study, advising youth about postsecondary programs that have accelerated offerings, offer valuable (and stackable) credentials, have good completion outcomes and offer job placement assistance upon completion of the program of study.

This work can be coupled with activities that provide youth with college exposure. These activities should be designed to make college feel less out of reach and show students that they can indeed benefit from and succeed in a postsecondary environment. These activities can include college visits, hearing from campus recruiters or older peers in college, more extended or hand-on tours through community college technical program areas or arranging for short-term “audits” of classes of interest.

Once youth settle on a course or study or career interest area, many programs build dual enrollment opportunities into the later stages of the preparation phase. Obviously the best indication of postsecondary readiness is the ability to take and pass an actual college course. Many youth programs building on-ramps to specific industries focus this first postsecondary work on the receipt of a first credential that can help youth find a good entry level job in the industry. These courses can be offered at the college, but also can be delivered by youth program staff certified as adjunct faculty or can be accessed (in some cases) online. Having a first postsecondary credential in hand when youth exit the program helps youth support the costs of the next (more intensive) technical program and also provides youth with confidence and momentum to continue their education and training.

A challenge here is that programs need to be of sufficient length and intensity to enable youth to both gain a secondary credential and get adequately prepared for college. This may require programs to lengthen their traditional program time, better utilize the summer as additional learning time or build bridging activities, as discussed below.

## PROGRAM IN ACTION

### Building a Weatherization Workforce in South Carolina through Corps

As all across the nation, weatherization jobs are growing in and around Charleston, South Carolina. In addition to the need to save energy, seventy percent of homes in the region have safety risks as gas water heaters, ovens, and other appliances with back-drafting leaks are more dangerous when houses are not effectively air-sealed. The Sustainability Institute (TSI) addresses this challenge by training and finding work for young people in its Energy Conservation Corps (one of 11 local sites that received ARRA funding via the Corporation for National and Community Service to The Corps Network). TSI recruits Corpsmembers from the communities where they serve, enabling participants to give back as they gain job skills and experience.

TSI's graduates can move from poverty to steady career employment in large part because the organization has strong partners. It builds certification-based skills and demonstrates return on investment through rigorous data collection.

The local community college, Trident Tech, is a key training partner. During a three-week intensive training program at the college, Corpsmembers learn about caulking, insulation, window and door replacement, how the house operates as a system, and combustion safety equipment. They receive the BPI IAST certification (Insulation and Air Sealing Technician) and ten days of National Center for Construction Education and Research (NCCER) training which includes construction fundamentals and Occupational Safety and Health Administration (OSHA) certifications.

Corpsmembers follow a scope of work created to maximize the impact of insulation, weather stripping, caulking and other techniques used to "tighten" the building envelope, all designed according to data gathered by a certified Home Energy Rater who audits the house following the HERS (Home Energy Rating System).

To ensure that Corpsmembers understand the value of their service experience and understand how their work is creating a positive impact on their communities and the environment, a second HERS rating assesses changes after the Corpsmembers complete their work. The data is run through a software modeling program that can forecast future energy bills, establishing performance measures that link results to significant practical implications. The typical result of Corpsmembers' work is a 20 to 30 percent reduction in energy use. For a low-income resident with monthly utility expenses of \$300, the resulting annual savings are approximately \$1,080, which is a big deal for the resident.

The three-week training, part of the Energy Conservation Corps experience, is funded under a US Department of Labor Pathways Out of Poverty award.

The impact on the community is significant, as is the impact on the lives of participants. For example, Corpsmember David Phillips and his family became homeless. Their only option was to move in with relatives in Columbia, SC — and to do so would mean leaving the Corps. At the time, David was serving on a crew weatherizing low-income homes owned by the Charleston Area Community Development Corporation (CACDC). The Community Development Corporation saw that the Energy Conservation Corps was about to lose a key Corpsmember, one with certifications and skills acquired at Trident Tech. To resolve this issue, CACDC let David and his family move into one of their homes. When David graduated a few months later, thanks to his Corps experience, he was immediately hired by a regional contractor for a stable, long-term job as a spray foam insulator.

Because youth contend with complicated life situations, postsecondary readiness requires a high degree of personalized guidance and supports. These supports should be aimed at removing barriers to program participation and keeping youth “on-track” with their education and life goals. Youth should use the exploratory activities within the program (or delivered as part of the service/work components) to get a good sense of a broad career area of interest. Once identified, program staff can help youth learn more about the local labor market, what jobs are most in-demand and what the various career ladders are for various green (or more traditional) careers. This kind of guidance helps youth make an informed choice of a postsecondary program of study. This more directed approach clearly shows the steps along a career pathway and drives the planning related to the choice of postsecondary institution (or course of study), the readiness needs of youth, their financial plan and how youth will combine work, learning and family obligations in ways that best support their success.

#### *Youth Development, Leadership and Support*

Both research and practical experience demonstrate that successfully working with disconnected youth requires that programs are grounded in a youth development approach — helping youth recognize their strengths, address their developmental challenges and use their leadership capabilities to build on their assets and develop more resources to help them grow into self-sufficient adults. Staff members skilled in a youth development approach utilize the perspectives youth bring to build a strong and responsive program while also helping young people gain new skills and competencies. Over the past two decades, community-based youth programs have led the way in developing effective strategies for disconnected youth by connecting youth development with workforce development and alternative education. Innovators in this work include Service and Conservation Corps, YouthBuild program “best in class” programs identified by the National Youth Employment Coalition’s (NYEC’s) PEPNet quality initiative, and more recently programs involved in the Postsecondary Success initiative described earlier in the paper.

A number of frameworks, including NYEC’s PEPNet standards and The Corps Network’s Excellence in Corps Operations (ECO) standards, have applied youth development principles to programs connecting youth to work and education. Key ele-

ments that these programs incorporate include the following.

- **Individual Planning and Guidance.** Developing an Individual Plan for each youth which addresses how the young person will build academic, career, and life skills to succeed in the program. The plan guides the young person’s program activities, and a team of adults works with the youth frequently to review and refine the young person’s goals and the overall plan as the youth progresses through the program and postsecondary education.
- **Youth Engagement and Leadership.** Engaging youth as active, respected contributors to the program, and building their leadership skills, personal responsibility and confidence in taking initiative.
- **Relationships with Caring Adults.** Developing and nurturing sustained relationships between youth and caring, knowledgeable adults, including program staff and, as appropriate, adult mentors outside the program.
- **Positive Peer Relationships.** Building positive peer and peer group relationships through opportunities for group work and achievement, peer involvement, peer leadership, and peer-to-peer assistance and support.

Linking youth with the green economy offers numerous opportunities to enrich youth development aspect of programs (as well as strengthen academics and career development). In conjunction with the strong leadership opportunities afforded by green energy, skill rich projects, youth have multiple opportunities to connect with adults in green occupations of interest. Many adults in the green economy are working in jobs in dynamic, growing fields that require technical skills and creativity. They bring enthusiasm and well-honed skills to the work and can serve as strong role models and mentors for young people with interest in these expanding fields. Adults in “green careers” are also likely to be committed to a social change agenda — consistent with the interests many young people have as they reclaim their lives and start to be interested in “giving back.” These career areas, in other words, not only offer opportunity to earn a good living but also the chance to make a difference in local communities, and even in the larger world. The service projects described in this paper, in fact, enable youth to be leaders in their commu-

nities, see the positive results of their efforts — from a newly-built trail to a cleaner stream to a park where children can now play — and be recognized for their efforts by others who may have viewed these young people negatively in the past.

Another important aspect of youth development is offering a variety of ongoing supports to young people who have strengths and contributions to make but also are likely to have complicated family and life issues. These “wrap-around” supports help youth clear barriers out of the way so they can realize their strengths and assets and put them in play for their own benefit and for the health and well-being of their families and the larger community. Wrap-around supports should be comprehensive and available when needed. They can include services such as transportation, health care, child care, or counseling; opportunities for youth to develop their talents and positive interests; develop skills for navigating daily life, such as self care, healthy behaviors, and household and money management; and help with work readiness, job placement and general work or life balance issues. Programs do not usually provide all wrap-around supports directly — instead they collaborate with other agencies to link youth to services and opportunities depending on individual needs and interests.

### Phase 2: Bridging and Transition

To make a successful transition to postsecondary, community-based programs and postsecondary institutions need to partner to deliver “bridging” activities. This component of the model is designed to create additional time to prepare youth for postsecondary programs of study. The bridge phase is not necessarily a distinct phase in that it can be delivered on the program site during the last stages of the preparation phase (for example, when students have passed most but not all of their GED tests and have “available” program time for dual enrollment coursework) or bridging can be delivered by a college partner (often during the summer or even, but less typically, during the first semester of admission).

Throughout the program, students should be developing strong knowledge about career opportunities, learning about education requirements for entry into and advancement in those fields and getting a beginning sense of what the college experience is like. Bridging activities hone in further and build

from these first experiences, strengthening academics, college knowledge and professional (“soft”) skills and support to do well on college placement exams.

Bridging (particularly when delivered by the college) typically offers students their first credit-bearing courses in a sheltered and supported environment (though some students will have taken first college courses during the preparation phase) and includes a college survival course that helps students gain postsecondary navigation skills while also getting assistance with the application process and financial aid. First coursework often involves delivery of “gatekeeper” courses that youth need to pass in order to access higher level or more directed technical coursework. These courses are often the ones that young people struggle to complete successfully and hence the bridge provides key supports to youth to take and pass these prerequisites. Bridge activities also help youth prepare for and do well on college placement tests so young people do not have to start in developmental (remedial) education.

Throughout the program, students should be developing strong knowledge about career opportunities, learning about education requirements for entry into and advancement in those fields and getting a beginning sense of what the college experience is like.

Youth need to develop short and longer-term financial plans that assure they have the resources to continue to a credential or degree. Program and postsecondary staff should work with students to access all available aid and help set up part-time work situations that enable more full-time (rather than part-time) study. Staff should work closely with young people to ensure that the combination of work and learning will allow youth to persist in the program and meet their immediate and ongoing financial responsibilities. In many cases, this involves educating youth about taking on some debt burden and showing them

**PROGRAM IN ACTION****In Dayton, Ohio, Forging the Path to Postsecondary Success**

ISUS (Improved Solutions for Urban Systems) is a non-profit organization dedicated to improving education and workforce outcomes for court-involved, dropout and underachieving youth. ISUS created three career/technical charter high schools that train students for jobs in high growth and high demand industries. Students attend school for a longer day and longer year — nearly 400 additional hours compared to conventional schools. ISUS is one of the sites participating in the Bill & Melinda Gates funded Postsecondary Success Initiative through the National Youth Employment Coalition.

ISUS' schools are focused on the fields of green construction, advanced manufacturing, computer technology, and health care. Through partnerships with community colleges, trade associations and businesses, students can obtain industry-recognized certifications, and complete coursework towards associate degrees while still enrolled in the charter high school. ISUS has an articulation agreement with Sinclair Community College which allows ISUS teachers, who are also certified as adjunct Sinclair faculty, to offer designated college classes. Construction students, following an industry apprenticeship program, practice green building techniques, install renewable energy systems and graduate with NCCER Core and Carpentry I Certifications. Since apprenticeship requires hands-on training, students build homes in the inner city — 57 homes to date. ISUS graduates who choose to continue apprenticeship training can do so at the second year level after graduation.

The ISUS approach also involves working with employer and business groups, such as the Ohio Valley Associated Builders and Contractors (OVABC), Dayton Tooling and Manufacturing Association (DTMA) and the Rotary Club. Youth receive supports throughout but especially during the transition to the college environment and during their first year of postsecondary education. Students are assisted by all of the partners to obtain employment and continuing education placements.

that the pay-off from a technical program and first job will allow them to repay the loan in a relatively short amount of time.

Bridging activities are often designed to support youth in cohort groups, so youth can begin to build or expand their social networks and strengthen friendships that help sustain them as they embark on college. In addition, bridging may involve program alumni currently enrolled in college as advisors or peer mentors for youth. These young people who have already overcome hurdles and learned “how to make it” can offer entering youth valuable perspective and encouragement as they choose from among a range of postsecondary options.

In each community, the programs and postsecondary institutions will need to design the bridging activities and determine which entity will deliver what particular aspects of the bridging services described above.

**Phase 3: Starting Smart: First Year Supports to Completion**

Postsecondary institutions and community-based programs also need to determine how they will work together to help

youth succeed in their first year in college, and work out how to provide ongoing supports to those who need them beyond the critical first year. In addition, partners must form relationships with employers to ensure that work-based experiences, such as paid internships, give youth adequate experience to enter the field. Partnerships with employers mean that youth can transition easily from technical programming to good first jobs.

Once youth are enrolled in college, case managers hired by the program or college (or cost-shared by partners) should work closely with them to customize course selection, address early barriers and provide the right academic or situational supports. Programs should work closely with their postsecondary partners to build the design and share resources to provide these supports. The most successful involve key college staff in looking at the first year and second year enrollment results in order to reflect what is working and what issues or program gaps need to be addressed by the partners to get even stronger results.

Community-based programs and their postsecondary partners in fact can build and offer a coordinated web of options

## PROGRAM IN ACTION

### Postsecondary Institutions and Corps: Facilitating Postsecondary Persistence

Numerous conservation corps work closely with postsecondary institutions to help youth both enter and in persist in college.

In one example in South Carolina, Trident Technical College and the Sustainability Institute's Energy Conservation Corps partner to support college enrollment and achievement of credentials. Trident Tech delivers classes in an old warehouse to make beginning classes less intimidating. Informal classes are led by instructors who have good rapport with Corpsmembers and staff from TSI attend regularly to interface with the Corpsmembers and their instructors. Corpsmembers, many for the first time, feel that there is a team helping to ensure their success.

In Los Angeles, the Los Angeles Conservation Corps (LACC) has partnered with Los Angeles Technical Trade College (LATTC) to support 50 Corpsmembers through completion of postsecondary. This partnership is one of the Postsecondary Success Initiative grantees through the National Youth Employment Coalition. LATTC provides office space for two LACC staff members so they may connect with youth at the college. The LACC staff members serve as familiar faces, encouraging youth and providing guidance regarding financial support, scheduling, studying and other challenges that present themselves daily. Students not academically prepared to enroll in credit bearing classes can begin with on-campus non-credit classes through LATTC's Trade Bridge Academy, which offers adult basic skills in reading, writing, and math, ESOL, and career education. This Bridge Academy enables young people, including LACC Corpsmembers, to pass the California High School Exit Exam.

and supports that help youth persist in their education. Institutions, in partnership with programs, often fashion a mandatory, sometimes even an "intrusive," approach to advising with these students — assigning advisors to work very actively with youth in the first six months to promote attendance, address any early snags, track academic progress and help youth connect to needed academic or other supports. Case managers often have visiting space on campus (if they are hired by the program instead of the college) and use a combination of in-person and social networking mechanisms to provide consistent "check-in's" (minimum of monthly and more often in the first 6-8 weeks). Programs that have emergency funds find them indispensable in helping youth cover start-up expenses or enable them to address life challenges or family crises that might otherwise result in early drop out. Youth also need to create financial plans for college and often need ongoing support in planning for and accessing a range of financial aid. Creating college or program-based work study programs or working with employers to create paid internships help students combine work and learning and

integrate work in ways that encourage more full time study and persistence in programs.

Postsecondary institutions and their community-based program partners should use data to monitor student progress, paying particular attention to performance in the first few months of college classes. The program or the college should provide intensive academic supports to help students, particularly those who are struggling, succeed in credit-bearing college courses. Offering performance-based incentives, such as scholarships, can help motivate students to accomplish personal and academic benchmarks. For students who are not on track to earn a credential after the first year of college enrollment, staff should create individualized plans that include additional, customized academic supports.

Helping youth build attachment to college also encourages persistence. Programs and colleges should help youth connect to campus resources, especially those targeted for first-generation college goers. Student mentors can provide key information on college courses to help first-year students make more

informed choices. Joining campus activities also helps youth feel connected to the institution. Engaging youth in small cohort-based learning and leadership communities can help them forge positive peer communities that encourage success. As much as feasible, programs should facilitate on-campus program alumni groups, to facilitate knowledge sharing between program graduates and make student mentors and advisors available.

Postsecondary institutions can also design offerings to help students progress as quickly as possible, such as developing accelerated, competency based programs leading to credentials in high-demand fields. This is happening more and more as colleges look at redesigning the first year experience for non-

traditional college students or those who are entering not quite “college ready.”

Putting together a strong first year support component is often quite a lift for both programs and their college partners. New or redeployed resources are obviously required. Once in place, staff tend to find that some (or even many) youth need continuing supports to encourage their completion, especially if they are enrolled in Associate’s Degree (rather than one year certificate) programs. Students are likely to have ongoing life and family issues as well as expected and unexpected financial issues. Some students continue to struggle with coursework; others tend to avoid course requirements they fear will be dif-

## SUCCESS STORY



### Reconnecting via Green Career Pathways: Profile of **Jordan Temple**

**CURRENT JOB:** Outreach Worker at Northwest Bronx Community and Clergy Coalition

**FORMER PROGRAM:** Green City Force (Brooklyn, NY)

Jordan Temple learned about Green City Force (GCF) at an information session at the community center of his housing development in Long Island City. Jordan had been in and out of college, but lacked conviction about school. At GCF, he began with a spotty record of attendance and performance but was challenged to persevere.

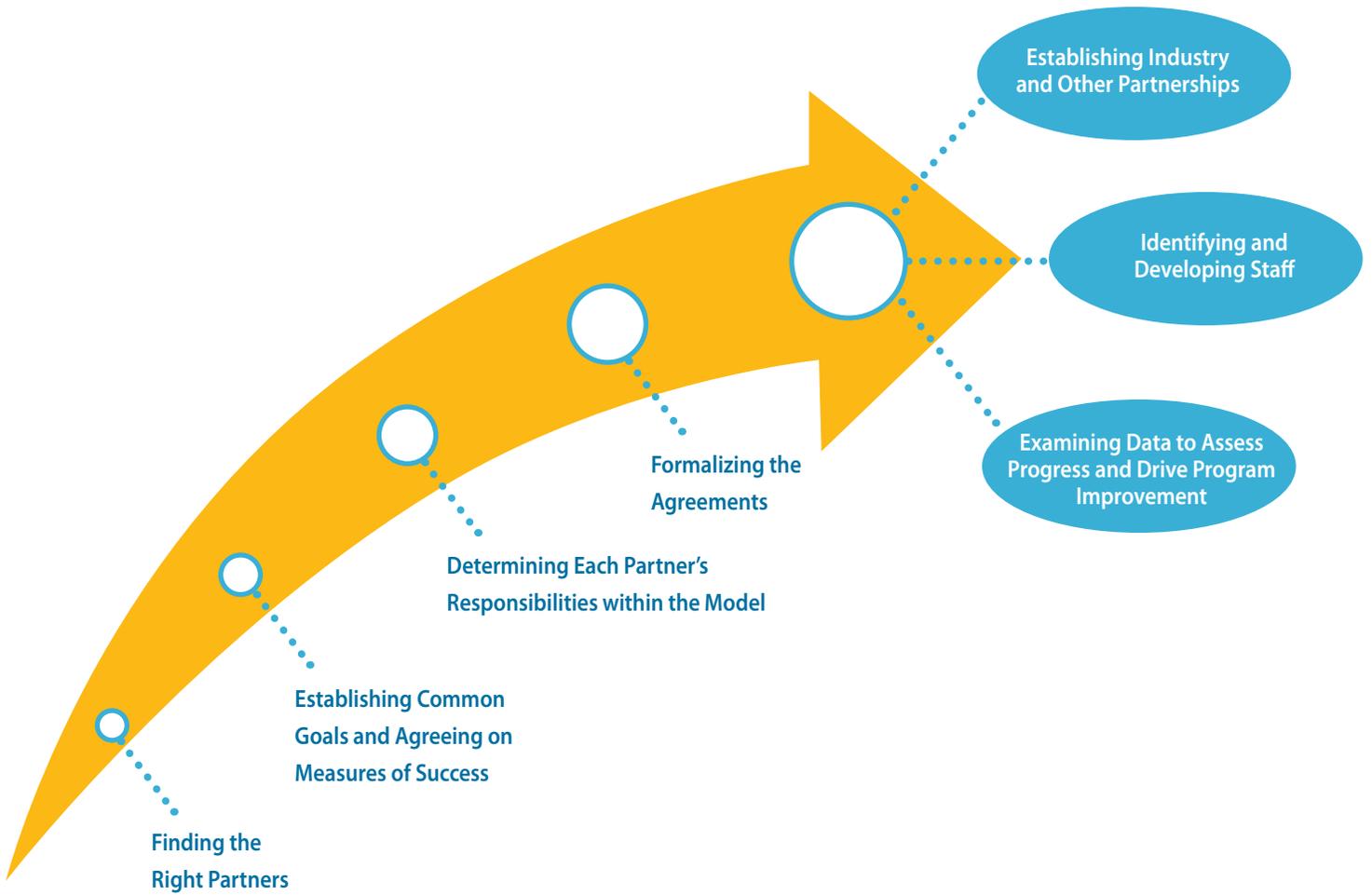
Jordan earned his OSHA 10 certificate and coated rooftops to improve energy efficiency as part of the NYC Cool Roofs campaign. He gained confidence and experience through going door to door in multi-family units with Community Environmental Center. Jordan developed a plan for an eco-business, building research and presentation skills, and earning top marks from the evaluating jury.

Jordan was chosen by his peers to speak at graduation: “After 6 months, and ripped biceps and a broader world view, my cohorts and I can tell you that there is no magic potion, no substitution for hard work, and maturation doesn’t happen overnight...Over the course of roughly 180 days and 7200 hours we have further developed and tapped into the goodness of our intrinsic nature; not only through service, but through perseverance, demonstrating a resolve we may never have known we ever had.”

Jordan used his AmeriCorps education award to enroll at Bronx Community College, where he is pursuing a degree in social work. He is also working part-time in the Weatherization Assistance Program at Northwest Bronx Community and Clergy Coalition (NBCCC), where he was offered a position after having impressed an NBCCC staff member who met him during a rooftop coating.

FIGURE 5

Connecting Youth Programs and Postsecondary Institutions



difficult and consequently continue to lack courses needed for graduation. Still others, without proper advising, take a hodge-podge of courses which keeps them accumulating coursework needed to complete a credential, degree or requirements for transfer. Adding new cohorts each year for limited staff does not really provide an answer to youths' need for support beyond the first year of college. Options for programs seeking to address this issue can include utilizing college resources where possible, connecting students to programs for first generation students on campus (and getting these youth access to proper and continuing supports), utilizing youth mentors (young people who have finished college and want to give back or youth who are nearly finished with their program of study) or creating second year study or support groups to give students opportunities to raise issues and problem solve solutions with adults and peers. It is also important to ensure that institutions remove any barriers to graduation, which could include fees or forms.

As youth progress in their course of study, either the program, postsecondary institution, or a combination of the two (partners should determine which organization has what responsibility) should assist youth in finding a full-time position to enter when they complete their credential. If the course of study is well aligned with employer needs it will prepare youth to transition quickly to full time employment and build work experience that then will ready them to take on further study and advance in the industry.

### Connecting Youth Programs and Postsecondary Institutions

The final Framework section offers guidance on generating the kinds of partnerships needed to design the on-ramp programming discussed above. Just as the design of career pathways requires that workforce, employer and community college partners work together, so too does the design of college connected programming require that organizations and institutions work together to ensure that programming is intensive and connected enough to ready and hold students to completion of a credential or degree and ensure labor market pay-off at the end.

This section draws from multiple experiences of YouthBuild USA and National Youth Employment Coalition (NYEC) grantees involved in the Postsecondary Success Initiative. These fifteen

initial grantee sites, with support from YouthBuild USA, NYEC, and Jobs for the Future, have been growing the kinds of college-connected designs detailed in the previous section of this paper. These designs are not possible to put in place without a solid partnership between a youth program and a participating community college. And, in order to design the kinds of service and work experiences that help young people enter green careers, strong partnerships are also needed with employers, especially those with immediate or near term employment needs.

### Finding the Right Partners

Community-based programs seeking to link their youth to green careers need to find the right postsecondary partner. If there are a number of colleges in the area, the right institution is likely to be the college most involved in developing career pathways and/or working to improve the college's completion outcomes. It perhaps goes without saying that strong leadership from the top down on one or both of these issues helps the youth programs find staff committed to bolstering the success of their youth or smoothing the way for non-traditional students to enter and succeed in their college's various programs of study.

Absent a choice of postsecondary institutions or strong leadership within these areas, an alternative step is for programs to search out and find the right people in the local institution. That might mean scouting for people at the college with special commitment to first generation students, or discovering a technical director seeking better prepared candidates for their program or an advisor looking to recruit from specific, underserved neighborhoods in the community. Seeking out leaders within the college that share common interests and goals helps programs move beyond more limited partnership activities (college staff doing information sessions on site or scheduling campus visits for the program) to an exploration of joint programming that has potential to radically change the success odds for their participants.

Postsecondary institutions can also benefit by reaching out to community-based youth program providers. Youth programs with extensive experience serving disconnected youth, especially programs that ground learning in rich work-based service projects, are excellent resources for colleges seeking better recruitment channels or improved education outcomes for non-traditional students.

## PROGRAM IN ACTION

### Community College and Corps Forge a Sustainable Agriculture Green Career Pathway

At the College of Marin, graduates of the Conservation Corps of North Bay (CCNB) prepare for careers in the growing industry of sustainable agriculture and horticulture. Course-related field work at the Indian Valley Organic Farm & Garden provides academic credit, job readiness, and work-study income. The 5.8-acre educational training center was created by the College, University of California Cooperative Extension Marin, and CCNB.

Rather than preparing participants for college while they do environmental service, CCNB brings environmental service to the campus as work-study. Instead of using service as an indirect way to teach math and language skills, service is the laboratory for subjects like soil management and horticultural science.

Corpsmembers have ownership of the most spectacular part of campus: the greenhouse, bursting with pots full of young plants, the gently curving hillside and its thriving rows of produce and brilliant stands of native flowers. College courses include Horticultural Science and Systems, Permaculture, Soil and Water Management, Environmental Landscaping, and others directly tied to growing local industries. Many corpsmembers are the first in their family to attend college.

Marin College's new Certificate in Sustainable Horticulture is part of a curriculum aligned with Agriculture & Environmental Sciences degree programs offered at University of California at the Davis and Santa Cruz campuses.

This partnership is the result of a 5+ year effort by CCNB to develop a successful postsecondary option. CCNB's programs explicitly identify conservation and environmental restoration as a key principle: everything they do is green. The Community Recycling program, often the entry-point for low-income English language learners, is framed in terms of conservation and pride in community.

CCNB involves multiple partners and utilizes the Farm to teach middle and high school students including after-school Cesar Chavez Clubs serving Title I schools about the health and environmental benefits of eating local, sustainably-produced food. It improves community health by providing underserved families with affordable organic produce. It showcases innovative sustainable growing and living practices for the people of Marin.

The Farm & Garden has strengthened community and heightened attachment to postsecondary success at the College of Marin.

#### Establishing Common Goals and Agreeing on Measures of Success

The first step in establishing partnerships strong enough to build an effective preparation or on-ramp to technical areas and green careers is getting a shared sense of the problems. A good way of doing this is to look at data. Key data can be collected in advance of an early meeting (perhaps by a program person who already has relationships on the campus) and the information can be prepared for presentation and discussion. Partners should gather and review a range of information such as 1) the persistence and completion rates of program participants; 2) program partici-

pants' college enrollment rates and scores on college placement tests; 3) entering students' participation and experience in developmental education and entry rates into credit-bearing coursework; 4) overall academic performance in college; 5) semester to semester enrollment rates; and 6) students' academic trajectories (rate at which they accumulate credits and the comparison of credits attempted versus credits achieved). Once partners review and discuss this information they can form a clear picture of what's working and what's not. This process builds ownership, clears the way for a discussion of what actions are needed, what comes first and how work should be staged over time. This initial

planning should also include discussion on how success will be measured and how positive results can benefit each partner.

### Deciding on Each Partner’s Roles and Responsibilities

Once work priorities are set, partners need to decide on each party’s particular roles and responsibilities (as well as figuring out how to share costs of this college-connected program design). Grantees and partners in the Postsecondary Success Initiative have found that program staff can play lead roles in these particular kinds of activities:

- Upgrading curriculum and providing more college ready instruction
- Creating a stronger college-going culture within the program
- Ensuring that service projects explicitly embed strong academic and technical skills needed for college entry and assessing these skills on a regular basis
- Readjusting schedules/creating additional time for exploratory activities that expose youth to college and career opportunities
- Upgrading counseling so staff are more knowledgeable about the labor market, in demand technical fields and career pathways (including emerging green credentials)
- Creating new staff positions (or redeploying staff to play postsecondary transition roles and to work more closely with college partners)

They find college partners must play roles in these areas:

- Reviewing curriculum and working with program staff to upgrade to college ready standards
- Consulting with program staff to set academic and technical standards for service/work projects
- Providing early certificate coursework for youth still in the program or certifying program staff as adjuncts for this purpose
- Designing on-campus exploratory experiences (class audits, mini-units, etc)
- Co-designing or delivering bridge programming
- Co-funding college success coaches (or other supports to help youth once they enter the institution)

### Formalizing the Agreements

Once priorities are selected and roles specified, work can begin. Early on it is often the quality of the relationships, and the clarity and ownership of work goals — along with “early wins” — that build partnership momentum. While it may be important to put some of the agreements in writing (in the form of Memoranda of Agreement), at the outset (data access is one area that comes to mind) overly formal agreements without real understanding or buy-in on the work can unnecessarily constrain risk taking or creativity at this stage of the game. Once activity is well underway and good processes designed, it is very helpful to codify agreements and roles in the form of MOU’s. This begins to institutionalize the work and ensure that it does not depend entirely on one-to-one relationships that can erode as the people involved move on to other jobs or positions within their organization or institution.

### Establishing Industry and Other Partnerships

Just as career pathway design depends on strong partnerships with key industries and employers, so too does development of strong “college connected” on-ramp programs. Connections with employers provide information that programs need to understand the actual demand for green jobs and what skills are necessary to get an entry level job and advance in the field. Close work with employers will also inform requirements for part-time or entry level jobs, including key information on age, driver’s license requirements, and willingness to hire young people with previous court or criminal justice involvement. In fact, encouraging employers to “try out” youth for job shadows or even hosting a Corps to do or assist with an energy audit (as one example) may serve as methods of introducing employers to the young people in the program and encouraging employers to look beyond the any previous challenges a young person might have faced to give them a fresh chance.

The earlier discussion on “Ensuring Credentials Have Labor Market Value” discussed the value of employer partnerships in some detail. Employers can contribute to college connected programming in a number of critical ways including advising on curriculum or upgrading or aligning service projects with key technical fields; lending or providing access to equipment; providing instructors, mentors and speakers; and providing in-

ternships and part-time work as well as full time jobs once youth earn their credential or degree.

Other partners may also be helpful to this enterprise. Where there is labor market demand and real potential for youth to enter apprenticeships and entry into union jobs, labor unions can be key partners, offering assistance with the design of curriculum and service experiences or advising on soft skills needed for entry to apprenticeships. Workforce Investment Boards can provide labor market information and access to employers, funds for upgrading the technical offerings of programs or — at a more systemic level — forge the partnerships with players that result in career or green pathway programming (and thereby more postsecondary options for young people in Corps, or other youth programs). Government agencies and community organizations focused on energy, the environment, supportive services, or working with particular populations may also make valuable contributions.

### Identifying and Developing Staff

Partners need to identify the right staff to play roles within a college-connected program design. This means that staff positions will likely need to be upgraded, added to or even seriously reconstituted. Partners will need to grapple with these issues. In some cases, retaining solid stable staff will necessitate upgrading skills. Teaching staff, for example, may need assistance in raising the level of academic rigor or performing more intentional assessment. Professional development needs to become embedded in the day to day practice of the program — not viewed as peripheral or an “add-on.” An example of this embedded practice occurs when program staff works with college faculty and employers to review and upgrade curriculum. This joint process involving partners with limited time to do work aside from their main duties needs to be efficient and effective. Program leaders often tap a trusted outside facilitator or intermediary to manage this work. As staff development becomes part and parcel of

daily practice, all staff must get comfortable with more scrutiny and transparency. Practice will only change in ways that make a difference for students if all parties are able engage in professional talk about efforts and needed improvements. Ongoing staff development will help to ensure that on-ramp and bridge programming has the heft needed to help youth become college ready and access technical training and especially exciting new green career programs.

### Examining Data to Assess Progress and Drive Program Improvement

Just as data shapes partners’ sense of the issues, so too does it inform the results of the work and point up areas for celebration and for improvement. Partners should agree on how often they look at data, who will review the results and how mid-course corrections and major program changes get decided. Data on the readiness of youth, their enrollment numbers, their persistence and success in postsecondary study and their job placement outcomes are key measures that illuminate the trajectory of these young people and show whether partners are addressing the key loss points along the way. While in many cases, a small group of partners reviews this information, usually at the end of each college term, there are other innovators experimenting with more creative measures. For example, the Youth Development Institute (a New York based intermediary), with partners at City Technical College in New York and case managers from Cypress Hills (a community-based program) meet at least quarterly as a team to review a data sheet on every student enrolled, raising and troubleshooting issues and recommending a set of services and supports that will help students address barriers and persist in their studies. Over time, these shared conversations have built considerable joint ownership for the outcomes of these students and are have resulted in changes at both the sending agency and the postsecondary institution.

## Conclusion

**B**uilding career pathways and on-ramps for disconnected youth to green careers is exciting work. As the Green Career Pathways Framework in this paper outlines, it requires a partnered approach in a local community or region, where leaders from industry, postsecondary institutions and workforce development organizations work closely to understand trends and developments in the green economy and develop training that leads to credentials and jobs responsive to labor market demand. Connecting with this work, youth programs can then build on-ramp approaches that better prepare disconnected youth for the demands of postsecondary study and create smoother routes into green career pathways.

Partnerships between youth programs, postsecondary institutions, industry and other workforce entities can enable the right mix of resources to create more intensive and effective on-ramps to green credentials and careers.

New interest in efforts that promote environmental sustainability — such as energy audits, retrofitting and resource conservation — provide opportunities for youth to provide valuable service to communities while combining work and learning in ways that make education and training beyond high school possible. Further, partnerships between youth programs, postsecondary institutions, industry and other workforce entities can enable the right mix of resources to create more intensive and effective on-ramps to green credentials and careers.

On-ramp models are emerging in communities and programs around the country, showing early evidence that partnered approaches and more connected and intensive designs are helping disconnected youth enroll, persist and complete postsecondary courses of study and enter green careers. With

### Federal Agencies Support Green Job Opportunities for Youth

The U.S. Department of Labor recently announced a federal partnership to provide support for youth to work in the great outdoors. In total, \$20 million has been allocated in 2011 for Civic Justice Corps grants to engage disadvantaged, disconnected, and formerly incarcerated youth in service on public lands while gaining green jobs training and experience.

As an added bonus, provisions in the Public Lands Corps Healthy Forests Restoration Act of 2005 allow the Departments of Agriculture and Interior to count Corpsmember time served in service on public lands as credit toward federal hiring requirements. An additional provision allows for non-competitive hiring status for graduates of the Public Lands Corps.

growing evidence on the ground, the challenge is to sustain the work and provide the resource and policy conditions to allow this work to grow and approach some level of scale. This paper highlights numerous practices in youth programs and postsecondary institutions, but additional partners will be needed to advocate and support these fledgling efforts. The paper concludes with ideas on how other key partners — employers, policy makers, funders, networks and advocates — can use the understandings gained from the Framework to help advance the growth of career pathway programming and strong on-ramps for disconnected youth to postsecondary study and entry to green careers.

### Actions that Employers and other Industry Partners can take include:

- Participating in efforts to build green career pathways in their community or region.

- Providing input on the types of green jobs they have a demand for currently, and developments they expect for the future.
- Articulating the skills, credentials and experiences needed to obtain and perform in entry level green jobs with opportunity for advancement.
- Advising technical training curricula and approaches to ensure that graduates have the skills employers need and the credentials that employers value.
- Offering a range of work experiences, from job shadows to internships to part-time work, which enable youth participating in on-ramp initiatives to build skills, earn money, prepare to work in the industry, and meet certification requirements while completing their secondary and postsecondary education — at the same time enabling employers to “try out” employees and gain additional staffing to meet needs.
- Offering permanent, full-time jobs to youth who graduate from partner training programs and attain desired credentials.

- Serving as resources, guest speakers, instructors, career advisors, or mentors in on-ramp and postsecondary programs.
- Talking with other employers about the potential of the disconnected youth population in building the green workforce, and the benefits of developing green career pathways in partnership with training providers.

### **Actions that Policy Makers and Funders can take include:**

- Leveraging and aligning existing investments and resources to promote the elements outlined in the Framework.
- Supporting development of partnerships among industry, postsecondary, program and other workforce organizations to build career pathways and in implement on-ramp programming.
- Providing incentives for partners to work together.
- Supporting youth programs and postsecondary institutions in delivering on-ramp programming to disconnected youth.

#### **Building a Green Pathway with the Emerald Cities Collaborative (ECC)**

The Emerald Cities Collaborative (ECC) is a consortium of diverse organizations — businesses, unions, community organizations, development intermediaries, social justice advocates, research and technical assistance providers — united around the goal of “greening” metropolitan areas in ways that advance equal opportunity, shared wealth, and democracy within them. In target cities, ECC is developing energy efficiency projects and jobs and integrated career and college pathways, connecting high road workforce and economic development in the sustainability market. In order to make a successful match between underserved, communities of color and demand for workers in this growth sector, ECC promotes the use of local hiring agreements and forges linkages between quality community-based programs and pre-apprenticeship construction programs to innovative registered construction apprenticeship programs.

#### **Campaign for Youth**

A national coalition involving over 1,000 organizations, the Campaign for Youth focuses attention on the needs of young people who are out of work, out of school and out of the mainstream, advocating for expansion of opportunities and supports that prepare youth for their future roles as workers, parents, civic leaders and engaged members of caring communities. The Campaign participates in a variety of approaches to keep national leaders educated on the dimensions of the dropout and employment crisis, the urgent need for federal attention and intervention, and the set of solutions which, if taken to scale, can create new options for these young people. The Campaign has developed a set of recommendations for a national strategy for federal investment to reconnect youth, and works with national and local advocates, policymakers and practitioners to influence policies that will ultimately enable positive outcomes for youth in disadvantaged situations.

- Promoting peer learning, professional development and innovation, among and across partners and communities.
- Spurring consideration of the green economy in a community or region and methods for linking disconnected youth and other under-skilled populations to it.
- Promoting efforts to understand the green labor market and connect training and certification with industry needs.

**Actions that Local, Regional and National Networks and Advocates can take include:**

- Raising awareness of the Framework and educating policy makers, funders, employers, youth programs, postsecondary institutions and other stakeholders about its elements.
- Making the case for the benefits of linking disconnected youth to green careers and the value of investment in that work.
- Identifying and connecting with efforts to develop green career pathways, and promoting an intentional strategy for including disconnected youth.
- Identifying and convening the key partners — employers, youth programs, postsecondary institutions, policy makers,

and other agencies — that need to be engaged in efforts to link disconnected youth to green careers.

- Fostering partnerships between community-based youth programs, postsecondary institutions, and industry to build career pathways and implement on-ramp programming for disconnected youth.
- Convening and/or surveying employers to explore labor market demand for green jobs and the skills, education, experience and credentials required of entry-level workers.
- Facilitating technical assistance, professional development and peer learning among and across partners and communities.
- Identifying and sharing promising practices and innovations in linking disconnected youth to green career pathways.

Communities with partners committed to action can use the Green Career Pathways Framework outlined in this paper to connect to and take full advantage of the tremendous opportunities the emerging green economy offers. With an intentional strategy, linking disconnected youth to green career pathways can meet the needs of industries, increase environmental sustainability, and enable an untapped group of Americans to realize their potential as thriving, contributing citizens.

# Acknowledgements

This paper was the result of input from many stakeholders from the fields of green jobs, youth workforce development, and education, including professionals from youth programs, national networks, government agencies, industry, universities, and organizations engaged in policy development, research, advocacy and technical assistance. The paper represents an exhaustive evolution of thought related to the green economy and the promise it holds for low-income, disconnected youth.

The Corps Network and several principal partners — Center on Wisconsin Strategy, Green For All, the Academy for Educational Development, Workforce Strategy Center and Living Cities — guided the development of the paper. A number of individuals made key contributions. Julian Alssid, Jeremy Hays and Shirley Sagawa helped conceptualize the paper’s scope and focus. Candace Hollingsworth provided research, writing and project support. Mindy Feldbaum, Vien Truong and Sarah White offered insights throughout the paper’s evolution and helped facilitate the conversations of the paper’s Working Group. Sarah White also crafted the elements of the paper related to industry focus and credentialing. Stephen Patrick, Senior Program Officer at the Bill & Melinda Gates Foundation, provided vision and unwavering support from the paper’s inception through completion.

Over 35 organizations and 50 individuals — listed below — participated in a Working Group that advised the paper. The Working Group came together for two day-long sessions during the paper’s development. The members of the Working Group identified the need for the paper and informed its scope; highlighted key areas to investigate and information to consider; reviewed and discussed elements of the paper and identified strategies stakeholders could employ to apply the findings in policy and practice.

We gratefully acknowledge all of these contributors, as well as the funders of the paper, the Bill & Melinda Gates Foundation and the W.K. Kellogg Foundation.

## Green Career Pathways Working Group

### Organization Name

- Abt Associates
- Academy for Educational Development
- AFL-CIO Center for Green Jobs
- American Association of Community Colleges
- Alliance to Save Energy
- America’s Promise Alliance
- Apollo Alliance
- Association for Career and Technical Education
- Bill & Melinda Gates Foundation
- BFA/Limitless Vistas, Inc.
- Center for Law and Social Policy
- Civic Works
- Center on Wisconsin Strategy, University of Wisconsin-Madison
- Earth Conservation Corps
- Environmental Protection Agency
- Georgetown Center for Poverty, Inequality and Public Policy
- Green For All

### Representative(s)

- Katherine Gan
- Mindy Feldbaum,\* Lisa Johnson, Denise Borders
- Jeff Rickert, Ragini Kapadia
- Kathy Mannes, Jen Worth
- Merrilee Harrigan\*
- Melinda Hudson
- Elena Foshay
- Steve DeWitt
- Steve Patrick
- Patrick Barnes\*
- Kisha Bird, Evelyn Ganzglass
- John Mello
- Sarah White\*
- Annette Gantt
- David Widawsky
- Peter Edelman\*
- Vien Truong, Jeremy Hays, Jason Walsh, Ladan Sobhani

Jobs for the Future  
Latin American Youth Center  
League for Innovation in the Community College  
Living Cities  
Los Angeles Trade-Technical College  
National Association of Manufacturers  
National Association of Workforce Boards  
National Council of La Raza  
National Institute of Corrections  
National Youth Employment Coalition  
Open Society Institute  
Philadelphia Housing Authority  
The Corps Network  
The Work Group  
US Department of Agriculture Forest Service  
US Department of Energy  
US Department of Labor  
US Department of the Interior  
The Workforce Alliance  
Workforce Strategy Center  
WSOS Community Action  
YouthBuild USA

Terry Grobe, Adria Steinberg  
Mai Fernandez  
Cynthia Wilson  
Tracey Ross, Marian Urquilla  
Marcy Drummond  
Emily DeRocco  
Terri Bergman  
Ana Hageage, Surabhi Jain  
Sherry Carroll\*  
Mala Thakur,\* Laura Jimenez  
Susan Tucker  
Audrey Lim  
Sally Prouty\*  
Lori Godorov  
Merlene Mazyck, Bill Woodland  
Alex Cohen, Keddy Chandran, Diane Murphy, Kristina Ronneberg  
Sara Hastings, Michelle Masse  
Julie Chavez Rodriguez, Ray Rivera, John Burden  
Rachel Gragg  
Julian Alssid, Maureen Bozell  
Kerrie Carte, Neil McCabe  
Eva Blake,\* Carlos Martin

\*attended both Working Group meetings

## Endnotes

- <sup>1</sup> White, Sarah & Jason Walsh. 2008. *Greener Pathways: Jobs and Workforce Development in the Clean Energy Economy*. Madison, WI: Center on Wisconsin Strategy, University of Wisconsin-Madison. p. 6.
- <sup>2</sup> Michigan Department of Energy, Labor & Economic Growth, Bureau of Labor Market Information & Strategic Initiatives. 2009. *Michigan Green Jobs Report 2009: Occupations & Employment in the New Green Economy*. Detroit, MI: Author. p. 4.
- <sup>3</sup> The Pew Charitable Trusts. 2009. *The Clean Energy Economy: Repowering Jobs, Businesses and Investments Across America*. Philadelphia, PA: Author. p. 12-13.
- <sup>4</sup> Martinson, Karin, Alexandra Stanczyk & Lauren Eyster. 2010. *Low Skill Workers' Access to Quality Green Jobs*. Washington, DC: The Urban Institute. p. 4.
- <sup>5</sup> *Michigan Green Jobs Report 2009*. p. 7.
- <sup>6</sup> *Michigan Green Jobs Report 2009*. p. 43.
- <sup>7</sup> *The Clean Energy Economy*. p. 3.
- <sup>8</sup> The White House. "Issues: Energy and Environment." Accessed 3 May 2011 at <http://www.whitehouse.gov/issues/energy-and-environment>.
- <sup>9</sup> Campaign for Youth. "Important Facts on America's Disconnected Youth." Accessed 2 June 2011 at <http://www.campaignforyouth.org/admin/fact/files/Important-Facts-on-Americas-DY.pdf>.
- <sup>10</sup> For more information on the National Youth Employment Coalition's Promising and Effective Practices Network (PEPNet), visit [www.nyec.org/pepnet](http://www.nyec.org/pepnet).
- <sup>11</sup> For more information on The Corps Network, visit [www.corpsnetwork.org](http://www.corpsnetwork.org).
- <sup>12</sup> Hipple, Steven. 2009. "The Labor Market in 2009: Recession Drags On." *Monthly Labor Review*. Vol. 133, No. 3. Washington, DC: Bureau of Labor Market Statistics. p. 6.
- <sup>13</sup> *The Clean Energy Economy*. p. 4.
- <sup>14</sup> Washington State Employment Security Department. 2010. *2009 Washington State Green Economy Jobs*. Olympia, WA: Author. p. 25.
- <sup>15</sup> White, Sarah, with Laura Dresser & Joel Rogers. 2010. *Greener Skills: How Credentials Create Value in the Clean Energy Economy*. Madison, WI: Center on Wisconsin Strategy, University of Wisconsin-Madison. p. 1.
- <sup>16</sup> *Greener Skills*. p. 3.
- <sup>17</sup> *Greener Skills*. p. 1.
- <sup>18</sup> Rogers, Kimberly M. & Rachel Pleasants. 2011. *Greening Community Colleges: An Environmental Path to Improving Educational Outcomes*. Boston: Jobs for the Future. p. 3-6.
- <sup>19</sup> U.S. Department of Energy. *Workforce Guidelines for Home Energy Upgrades, Public Review Draft*. Accessed 8 March 2011 at [http://www1.eere.energy.gov/wip/pdfs/workforce\\_guidelines\\_home\\_energy\\_upgrades.pdf](http://www1.eere.energy.gov/wip/pdfs/workforce_guidelines_home_energy_upgrades.pdf).
- <sup>20</sup> For a number of examples of community colleges that have incorporated sustainability practices, see: Feldbaum, Mindy with Hollyce States. 2009. *Going Green: The Vital Role of Community Colleges in Building a Sustainable Future and Green Workforce*. Bellingham, WA: National Council for Workforce Education; and Washington, DC: Academy for Educational Development. p. 6-11.
- <sup>21</sup> Feldbaum, Mindy, Frank Greene, Sarah Kirschenbaum, Debbie Mukamal, Megan Welsh & Raquel Pinderhughes. 2011. *The Greening of Corrections: Creating a Sustainable System*. Washington, DC: US Department of Justice, National Institute of Corrections. p. 35-37.
- <sup>22</sup> The Building and Construction Trades Department, AFL-CIO. n.d. *Building Trades Multi-Craft Core Curriculum*. Washington DC: Author.
- <sup>23</sup> Casner-Lotto, Jill. 2006. *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce*. New York: The Conference Board, Inc.

- <sup>24</sup> O'Sullivan, Kate, Ed. 2005. *PEPNet Guide to Quality Standards for Youth Programs: Linking Youth to Work and Education for a Successful Transition to Adulthood*. Washington, DC: National Youth Employment Coalition. p. 50.
- <sup>25</sup> For a number of examples of community college initiatives preparing workers for green jobs, see: *Going Green*, p. 8.
- <sup>26</sup> *Going Green*. p. 8.
- <sup>27</sup> Bozell, Maureen R. & Cynthia D. Liston. 2010. *Building Effective Green Energy Programs in Community Colleges*. New York: Workforce Strategy Center. p. 7.
- <sup>28</sup> *Building Effective Green Energy Programs in Community Colleges*. p. 11-12.
- <sup>29</sup> For more information on the NAM-Endorsed Manufacturing Skills Certification System, visit [www.manufacturingskills.org](http://www.manufacturingskills.org).
- <sup>30</sup> Jobs for the Future. 2011. *Back on Track to College: Key Elements and Operational Features*. Boston, MA: Author.





