

# A MATTER OF DEGREES

TOMORROW'S FASTEST-  
GROWING JOBS AND  
WHY COMMUNITY COLLEGE  
GRADUATES WILL GET THEM

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## EXECUTIVE SUMMARY

Even as the Obama administration and Congress work to turn the economy around and re-start America's job engine, it's not too early to recognize what skills will be in the greatest demand over the long haul, once the job market picks up again. With unemployment above 9 percent and still rising, we can't predict how soon job growth will begin. But for the long term, we can predict what the coming job boom will look like – which jobs will likely grow the fastest and what level of skill they will require.

This study examines tomorrow's hot jobs in four of the fastest growing sectors of the economy: education, health care, information technology, and energy and environment. We define "hot jobs" as jobs paying above average wages (above the 2006 median wage of \$32,000) and having above average growth (more than 10 percent), according to Bureau of Labor Statistics' (BLS) projections for the period of 2006 to 2016.

Our analysis revealed a few things that we expected: the more education you have the more you can earn; and unemployment is significantly lower for the highly educated than for the less educated.

But we also discovered a number of surprising things about the critical importance of education, health care, energy, and information technology in long-term job creation and economic growth:

- **Jobs that require associate degrees will grow at nearly double the national average.** Over the next decade, college degrees will become more valuable than ever, and the demand for community college graduates will grow even faster than for those with bachelor's degrees.
- **Nearly a third of job growth will be in health care and education.** The two sectors produced the most job growth in 2008, and will generate more than three out of 10 new jobs over the next decade.
- **The highest-paying hot jobs will be in Information Technology.** IT jobs will require highly skilled workers with extensive education. Those who are properly trained will be rewarded with the highest-paying jobs.
- **Jobs in energy and the environment could triple over the next decade.** Spurred by the economic recovery package and other efforts to promote energy innovation, this sector will be a pillar of the new Hybrid Economy.

These findings underscore the need for the ambitious community college agenda that President Obama put forward in Michigan over the summer. His *American Graduation Initiative*, a top priority of the New DLC, would help 5 million more Americans earn community college degrees and certificates over the next decade.

As White House Chief of Staff Rahm Emanuel said in June, when he previewed the plan at a DLC forum on education and health reform:

What has been forgotten is how important the community college system is to our economy, our ability to compete in a global economy. It is literally the con-

veyor belt to allow people to upgrade their skills when they're going from X job to Y profession. As a former member of Congress who had a community college, two of them, in his district, I cannot tell you how important this is. It has not gotten the attention of the four-year institutions, but as a competitive advantage for the United States, the community college system is essential.

In February, President Obama told Congress and the nation, "I ask every American to commit to at least one year or more of higher education or career training. This can be community college or a four-year school; vocational training or an apprenticeship. But whatever the training may be, every American will need to get more than a high school diploma."

America's ability to generate hot jobs – and individual Americans' ability to obtain them – will depend on whether we can live up to Obama's challenge, and once again have the highest proportion of college graduates on earth.

## FINDING 1: JOBS FOR COMMUNITY COLLEGE GRADS WILL GROW AT TWICE THE NATIONAL AVERAGE AND BE HIGHER-PAYING

The United States is the world's largest service-producing economy. Continuing a trend that began over 60 years ago, the service sector's contribution to the national output has increased from 48 percent of GDP in 1947 to 71 percent today, while the share from manufacturing and goods-producing industries has declined from 40 percent to 19 percent.<sup>1</sup> As the U.S. economy has transitioned from a goods-producing economy to a service-producing economy, the demand for and premium paid for skilled labor (the major input in the service economy) has also risen. The United States' economic advantage comes from having the largest skilled labor force in the world. Maintaining this edge will require us to upgrade worker skills constantly to stay ahead of the curve.

*While job growth for all workers is estimated to average 10% over the 2006-2016 period, job growth for associate degree holders is expected to be nearly double that at 18.7%, faster even than new job growth for bachelor's degrees.*

According to a recent report by the President's Council of Economic Advisors (CEA), "Worker flexibility is key given the dynamic nature of the U.S. labor market and ongoing technological change. In 2003, for example, a quarter of American workers were in jobs that were not even listed among the Census Bureau's occupation codes in 1967, and technological change has only accelerated since then."<sup>2</sup>

While a high school diploma doesn't pay what it once did, that doesn't mean we are all going to need to get PhDs to compete in today's skilled workforce. But overall, job growth will be faster, and

<sup>1</sup>Bureau of Economic Analysis (BEA), Gross Domestic Product by Industry data, current and historical, available at: [http://www.bea.gov/industry/gdpbyind\\_data.htm](http://www.bea.gov/industry/gdpbyind_data.htm).

<sup>2</sup>Council of Economic Advisors, "Preparing the Workers of Today for the Jobs of Tomorrow," July 2009.

unemployment lower, for workers with at least a post-secondary certification or an associate degree. While total job growth for all workers is estimated to average 10 percent over the 2006-2016 period, job growth for associate degree holders is expected to be nearly double that at 18.7 percent, faster even than new job growth for those with bachelor's degrees. In fact, of the 11 education categories in Table 1 below, only those obtaining a doctoral or master's degree will see good job opportunities increase faster than graduates of community colleges.

*TABLE 1: EMPLOYMENT AND TOTAL JOB OPENINGS BY POSTSECONDARY EDUCATION AND TRAINING CATEGORY<sup>3</sup>*

| DEGREE TYPE                                       | PERCENT CHANGE 2006-2016 |
|---|--------------------------|
| Doctoral degree                                   | 21.6                     |
| Master's degree                                   | 18.9                     |
| Associate degree                                  | 18.7                     |
| Bachelor's degree                                 | 16.5                     |
| First professional degree                         | 14.0                     |
| Postsecondary vocational award                    | 13.6                     |
| TOTAL, ALL OCCUPATIONS                            | 10.4                     |
| Bachelor's or higher degree, plus work experience | 9.1                      |
| Work experience in a related occupation           | 9.0                      |
| Short-term on-the-job training                    | 8.8                      |
| Moderate-term on-the-job training                 | 7.4                      |
| Long-term on-the-job training                     | 6.2                      |

**18.7%** | Expected job growth for associate degree holders from 2006 to 2016 -- nearly double the total expected job growth over that span.

*From 2006 to 2016, there will be over 2 million new jobs created requiring at least an associate degree or post-secondary training. Of those, 1.3 million jobs, more than half, make the hot jobs list.*

Not only will there be more jobs available for those with associate degrees in the future, but the jobs they will compete for will be better-paying as well.

Nearly one in six “hot jobs” – jobs paying above average wages (above the 2006 median wage of \$32,000) and having above average growth (more than 10 percent) – will require an associate degree or some post-secondary training, much of which is done at community colleges. Table 3 (see Appendix, p. 15) shows that a typical annual wage for one of these jobs is \$44,315 per year – more than \$12,000 above the median wage. And the average expected lifetime earnings for a graduate with an associate degree will be \$1.6 million, about \$400,000 more than a high school graduate earns.<sup>4</sup>

An associate degree is primarily awarded by community colleges, as well as some four-year universities and business colleges, upon completion of a course of study usually lasting two years. Today, almost half of all undergraduates in the United States are in programs that lead to an associate degree. Students typically seek an associate degree in order to gain access to a 4-year program, learn workforce development skills, or receive retraining.

<sup>3</sup>Bureau of Labor Statistics.

<sup>4</sup>American Association of Community Colleges.

From 2006 to 2016, over 2 million new jobs will be created that require at least an associate degree or some other post-secondary training. Of those, over 1.3 million jobs, more than half, make the hot jobs list of above average growth and above average wages. And considering that at least 40 percent of associate degree holders will go on to get their bachelor's, associate degrees will be more popular than ever.<sup>5</sup>

## FINDING 2: HEALTH CARE AND EDUCATION WILL CREATE NEARLY A THIRD OF THE NATION'S NEW JOBS.

Health care is the single largest sector of American economy and will generate more than 3 million new jobs by 2016, more than any other industry. With almost one in four Americans enrolled in educational institutions, education is the second largest industry in the country behind health care. And because almost 50 percent of teachers are over the age of 45, education is also expected to be among the fastest growing industries for jobs in the next decade.<sup>6</sup>

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*More than 3 out of every 10 new jobs created in the U.S. economy will be in education or health care. In fact, education and health care were the only two sectors of the economy that managed to add over half a million jobs in 2008.*

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Taken together, more than three out of every 10 new jobs created in the U.S. economy will be in education or health care, according to the BLS.<sup>7</sup> In fact, education and health care were the only two sectors of the economy that managed to add over half a million jobs in 2008. Table 4 (see Appendix, p. 18) shows that more than 2 million hot jobs (the fastest growing, higher paying positions) will be in education and health care. These jobs have a median pay of \$39,492 for positions in the health care sector and \$49,399 in the education sector.

Registered Nurses (RNs) are the single largest health care occupation; they also represent the largest single source of hot jobs in both sectors. There were 2.5 million RNs in 2006, and that number is expected to grow by over half a million by 2016. There are several paths to becoming an RN, but all RNs must graduate from an approved nursing program and pass a national exam to receive their license. Nursing programs frequently offer a Bachelor's of Science Degree in Nursing (BSN), an Associate Degree in Nursing (ADN), a diploma program administered by a hospital, or an accelerated BSN program for individuals who already have a bachelor's degree in another field. Accelerated BSN programs can be as short as 12 to 18 months. Generally speaking, RNs with more advanced degrees, for example a BSN rather than an ADN, enjoy better job prospects and higher wages.

Two of the fastest-growing health care jobs, physical therapist assistant and dental hygienist, only require an associate degree. Indeed, the health care sector is where an associate degree really pays off. Seven of 11 health care hot jobs on the list requiring an associate degree paid better than \$45,000 in 2006.

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<sup>5</sup>Ibid.

<sup>6</sup>Bureau of Labor Statistics, Occupational Outlook Handbook, 2008-09 Edition.

<sup>7</sup>Ibid.

Education positions are generally high-skilled jobs, but the demand from employers means there will be plenty of opportunities for dislocated workers interested in a career shift, as well as new entrants.

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Elementary and secondary public school teachers are typically required to have a bachelor's degree and complete an approved teacher training program for their state license. All states require public school teachers to be licensed, but many offer an alternative licensing program for people who have a bachelor's in the subject they will teach but lack the education credits. Programs such as Teach for America have capitalized on this by placing new college grads in classrooms while they complete course work for an alternative certification. Creating programs for experienced professionals in the Teach for America model could be a valuable way to match workers with skills in computers, technology, banking, and business with job openings in schools across America.

Similarly, junior colleges and vocational schools often do not require their faculty to obtain advanced post-graduate degrees or doctorates. As the service economy grows, so will employer demand for teachers with technical experience in industries such as information technology, health care, and renewable energy.

### FINDING 3: THE HIGHEST-PAYING HOT JOBS WILL BE IN THE INFORMATION TECHNOLOGY (IT) SECTOR

In the early days of the technology boom in the 1990s, workers could land IT jobs without a college degree or much formal job training. In recent years, many of these low-skilled jobs, such as data entry, have been off-shored to locations where labor is cheap. Even some skilled jobs like computer programming have migrated to countries like India, where skilled labor is becoming more available. As a result, the IT jobs of the next decade will be highly skilled positions with an emphasis on business process and close proximity to the client.

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*A National Science Foundation survey found that 66% of IT workers received their degree in a field other than computer and information sciences, indicating a high degree of flexibility for skilled workers interested in these well-paid and fast-growing jobs.*

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The good news is that, despite off-shoring, the IT sector is still expected to grow significantly – the IT hot jobs in Table 5 (see Appendix, p. 21) will average 26 percent growth over ten years. And these jobs will continue to pay better, across the sector, than hot jobs in any other sector.

As Table 5 indicates, the median wage for hot jobs in this sector runs from \$41,470 for computer support specialists to \$101,580 for computer and information systems managers. The average median wage for jobs in this sector is \$71,415.



To get these jobs, workers will need skills. Business process modeling, messaging and communications, IT architecture, IT security, and project management expertise will be in high demand. These jobs will generally require a bachelor's degree or some industry recognized professional certification. According to BLS almost 70 percent of IT workers have a bachelor's or higher. However, a National Science Foundation survey found that 66 percent of IT workers received their degree in a field other than computer and information sciences, indicating a high degree of flexibility for skilled workers interested in these well-paid and fast-growing jobs.<sup>8</sup>

## FINDING 4: ENERGY AND ENVIRONMENT JOBS COULD TRIPLE IN 10 YEARS<sup>9</sup>

According to a report released by the United States Conference of Mayors last October, there are some 750,000 "green jobs" in the United States today. The report found that over half (419,000) of current green jobs were found in the categories of *Engineering, Legal, Research and Consulting*, highlighting the important role supportive or "indirect" jobs play in moving the economy toward energy independence. The second largest category was *Renewable Power Generation* (127,000 jobs), followed by *Agriculture and Forestry* providing a significant contribution of 57,500 jobs.<sup>10</sup>

Some have criticized the assumptions made in projecting future jobs as being overly optimistic. But it is important to note that the study was published before the passage of President Obama's economic stimulus, which allocates \$50 billion for clean energy incentives to spur job growth in this area.

Our study focused on four specific areas of "green jobs": wind energy, solar energy, biofuels, and building retrofitting. In part, we did so because of the large number of incentives included in the stimulus bill, recently executed fuel standards, and the current emphasis by businesses on retrofitting buildings as a means to save costs.

Jobs in areas such as solar energy, wind energy, and biofuels promote the development of alternative, clean energy sources while building retrofits reduce emissions by cutting down on the consumption of fossil fuels. Importantly, green energy jobs often save jobs in industries with declining employment, such as agriculture, construction, and manufacturing.

Wind is the fastest growing energy source in the United States. In 2007, wind energy production increased by 21 percent, and a recent report by the United States Department of Energy suggests that it could contribute 20 percent of the nation's electricity by 2030.<sup>11</sup> The American Solar Energy Society estimates that in 2006, there were 16,000 jobs in wind turbine construction and maintenance. These jobs were once confined to the few states that were the first to promote renewable energy, but wind farms now operate in 34 states across the country.<sup>12</sup>

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<sup>8</sup>Benjamin Wright, "Employment, trends, and training," Occupational Outlook Quarterly, Bureau of Labor Statistics, Spring 2009.

<sup>9</sup>The United States Conference of Mayors, "Green Jobs in U.S. Metro Areas," prepared by Global Insight, Inc., October 2008.

<sup>10</sup>Ibid.

<sup>11</sup>The United States Department of Energy, "20% Wind Energy by 2030: Increasing Wind Energy's Contribution to U.S. Electricity Supply," July 2008.

<sup>12</sup>Phillip Bastion, "On the Grid: Careers in Energy," Occupational Outlook Quarterly, Fall 2008.

We estimate that jobs in the wind energy field will grow the fastest among the three alternative energy sources we looked at in this study. Our research projects the creation of 285,000 net new jobs in the wind energy sector (assuming full impact of the stimulus funding) by the end of 2010. The bulk of jobs related to wind infrastructure will come in the manufacturing of equipment.

The technology of wind electricity is relatively new, but the manufacturing base for its production is very similar to past products. Every state in the country has firms and a labor force with experience making products similar to the blades, gearboxes, brakes, hubs, cooling fans, couplings, drives, cases, bearings, generators, towers, and sensors that make up a wind tower. These jobs fall into the familiar durable manufacturing sectors of plastics and rubber, primary metals, fabricated metal products, machinery, computer and electronic products, and electrical equipment.

*TABLE 2: ENERGY AND ENVIRONMENT  
HOT JOBS<sup>13</sup>*

| SECTOR                | NEW JOBS | TIMELINE  |
|-----------------------|----------|---|
| Wind Energy           | 285,000  | By the end of 2010 with incentives from the economic stimulus package.    |
| Solar Energy          | 110,000  | By the end of 2010 with incentives from the economic stimulus package.    |
| Biofuels              | 94,000   | By 2016 with minimum US Renewable Fuel Standard for transportation fuels. |
| Building Retrofitting | 81,000   | By 2018 with a 1% reduction in energy use.                                |

Solar panel technology has been around for decades. The American Solar Energy Society estimates that in 2006, there were 7,600 jobs in the solar photovoltaic and solar thermal energy industries. Most of these workers were solar photovoltaic installers. Workers enter the solar energy field from a variety of backgrounds, but most have construction experience.<sup>14</sup>

*The solar energy industry will grow by 110,000 jobs by the end of 2010.*

We estimate that jobs in the solar energy industry will grow by 110,000 jobs by the end of 2010. This is a significant increase. Many potential manufacturing jobs in the solar industry are high-tech jobs in the semiconductor sector. Nearly one quarter of existing jobs in this area are in California, but many other states have a significant presence too. But solar infrastructure also requires components from more traditional sectors such plastics and rubber, fabricated metal products, and electrical equipment.

Biofuels, sometimes also called renewable fuels, are fuels produced from plant or animal products or wastes, rather than from fossil fuels. The Environmental Protection Agency (EPA) manages the Renewable Fuel Standard (RFS) program, created by the Energy Policy Act of 2005, which demands that fuel producers blend renewable products into the nation’s gasoline supply. The RFS program requires increasing the use of renewable fuels on a fixed schedule every year until 2012, after which renewable fuel use is linked to demand growth for gasoline. According to a recent study, direct new jobs from

<sup>13</sup>(1)“Jobs, Blowing in the Wind,” Newsweek, April 15, 2009. (2) Bio Economic Research Associates, “US Economic Impact of Advanced Biofuels Production: Perspectives to 2030,” February 2009. (3) The United States Conference of Mayors, “Green Jobs in U.S. Metro Areas,” prepared by Global Insight, Inc., October 2008.

<sup>14</sup>Phillip Bastion, “On the Grid: Careers in Energy,” Occupational Outlook Quarterly, Fall 2008.



biofuels production could reach 94,000 by 2016 just by meeting RFS program requirements.<sup>15</sup> Jobs in biofuels production include agricultural workers, chemical engineers, mixing and blending machine operators, and industrial truck drivers.

*The Conference of Mayors found that reducing energy consumption for residential and commercial buildings by just 1.2% a year would create 81,000 direct jobs.*

Building retrofitting, which employs electricians, carpenters, heating and air conditioning installers, insulation workers, and engineers, reduces energy usage and pollution and saves money over the long-term. Recently, the Empire State Building in New York announced a retrofitting project to cut the building's annual energy usage by 38 percent by 2013 and cut annual carbon emissions by 105,000 metric tons – equal to the annual emissions of 17,500 cars. There is enormous untapped potential for job growth in this new sector: the U.S. Green Building Council estimates that buildings in the United States account for 72 percent of electricity consumption, 39 percent of energy use, and 38 percent of carbon emissions.<sup>16</sup> The Conference of Mayors found that reducing annual energy consumption for residential and commercial buildings by just 1.2 percent would create 81,000 direct jobs by 2018.<sup>17</sup>

## RECOMMENDATIONS

America is blessed with the greatest college system on earth. We ought to lead the world in producing college graduates.

The American Recovery and Reinvestment Act of 2009 included several important provisions to make college more affordable, increasing Pell Grants, expanding work-study, and providing a \$2,500 college tax credit. President Obama's *American Graduation Initiative* includes important new steps to help more Americans attend community colleges.

We recommend five proposals designed to help the president meet his goal of being first in the world in proportion of college graduates by 2020:

### *1. MAKE COMMUNITY COLLEGE FREE FOR THE NEXT TWO YEARS FOR ANYONE WHO MAJORS IN HEALTH CARE, EDUCATION, INFORMATION TECHNOLOGY, AND CLEAN ENERGY.*

Millions of Americans have responded to the economic downturn in the most responsible way: they want to save more and study more. With an under-employed workforce, soaring youth joblessness, and real concerns about our long-term ability to compete, we ought to give Americans the chance to retool. Educational levels soared during the Depression because so many young Americans stayed in school longer. That helped make the GI Bill possible, as well as the postwar boom that

<sup>15</sup>Bio Economic Research Associates, "US Economic Impact of Advanced Biofuels Production: Perspectives to 2030," February 2009.

<sup>16</sup>U.S. Green Building Council, Green Building Research, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1718>.

<sup>17</sup>The United States Conference of Mayors, "Green Jobs in U.S. Metro Areas," prepared by Global Insight, Inc., October 2008.

followed.

If we're going to emulate that sort of boom, we need to make sure the doors of opportunity stay open in hard times. Community colleges are being squeezed by the twin pressures of steep cuts in state government budgets on the one hand and record enrollment on the other. The budget picture is especially dire in states that have done the most to make community college affordable: California will increase community college fees by 30 percent this fall; many community college systems – including Miami Dade College, the largest in the United States – have been forced to limit enrollment.

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*Community colleges are the best training programs we have. They're cheap, public, market-driven, easy-to-find, and popular — in other words, everything that many traditional government retraining programs are not.*

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According to a recent report by the President's Council of Economic Advisors (CEA), "approximately 35 percent of college students, 35 percent of individuals receiving job training through the Workforce Investment Act (WIA), and a notable proportion of adults attending adult basic education (ABE), General Education Development (GED), and English as a Second Language (ESL) classes are enrolled in a community college."<sup>18</sup> Community colleges are the best training programs we have. They're cheap, public, market-driven, easy-to-find, full of choices, and popular – in other words, they're everything that many traditional government retraining programs are not.

Community colleges need all the help they can get to ensure that students graduate with the skills they and our economy will need. For that reason, the federal government should create a community college block grant that will award states money each year based on the number of students that graduate with degrees in high-demand areas of study.

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*Almost 50,000 qualified applicants were turned away from nursing programs in 2008 because the programs lacked faculty and funding to meet student demand.*

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One high-growth area is registered nursing, which is the single fastest growing occupation in the United States. Over half a million new positions are expected by 2016. Already there is a deficit of nurses today, with more than 100,000 unfilled nursing vacancies in hospitals and 116,000 open positions in nursing homes. And the nursing shortage is only expected to worsen as nearly 78 million baby boomers enter their golden years, requiring more chronic and nursing home care.

There is no doubt that nursing is a demanding yet rewarding occupation, but the problem is not low student interest. According to the American Association of Colleges of Nursing, almost 50,000 qualified applicants were turned away from nursing programs in 2008 because the programs lacked faculty and funding to meet student demand. "The nursing shortage is not driven by a lack of inter-

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<sup>18</sup>Council of Economic Advisors, "Preparing the Workers of Today for the Jobs of Tomorrow," July 2009.

est in nursing careers. The bottleneck is at the schools of nursing because there's not a large enough pool of faculty," said Robert Rosseter of the American Association of Colleges of Nursing. One reason given for the squeeze is that nurses with the graduate degree required to be able to teach can make more money as practicing nurses – \$82,000 per year versus \$68,000 on average.<sup>19</sup>

In July, the Department of Health and Human Services announced \$200 million of stimulus funds to support grants, loans, loan repayment, and scholarships to train approximately 8,000 students and credentialed health professionals by the end of fiscal year 2010.<sup>20</sup> This is a start, but 8,000 nurses won't make nearly a dent in the 200,000-nurse shortage. To help expand nursing programs (and recruit more faculty by offering better salaries), a portion of the community college block grant should be targeted toward increasing the number of nursing graduates.

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*Palm Beach Community College in Florida and Lansing Community College in Michigan have both seen enrollment soar by over 80% for new associate degree programs in alternative energies.*

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Similarly for green energy jobs, demand for training and certifications exceeds what community colleges are currently able to offer. Green jobs in solar and wind power installation and green construction typically require more than a high school education but less than a four-year degree, which is why community colleges have seen demand rise for these skills faster than at traditional universities. Across the country there are long waiting lists for classes. In California, San Jose City College has long waiting lists for its solar installation classes and in North Carolina, Central Carolina Community College has long waiting lists for green building and renewable energy classes. Palm Beach Community College in Florida and Lansing Community College in Michigan have both seen enrollment soar by over 80% for new associate degree programs in alternative energies.<sup>21</sup>

Finally, through President Obama's proposed "National Online Skills Laboratory," we should also make high-quality online courses available to community colleges and students pursuing degrees for high-demand professions. This initiative would be temporary, tied to the recovery, and focused on areas of study where future job growth is projected to be high.

## ***2. LAUNCH A NATIONAL PUBLIC CAMPAIGN AGAINST BOTH HIGH SCHOOL AND COLLEGE DROPOUTS.***

Over the last 20 years, the United States has made some progress in reducing high school dropout rates. But we must do more to reform high schools, the weakest link in our educational system.

Unfortunately, the nation has done nothing about the other dropout problem – the millions of young people who go to college but leave without a degree. Every year, about half a million young people drop out of four-year colleges. At community colleges, the dropout rate is even higher, and the effects are dire. Unlike college graduates, whose incomes have gone up substantially over the last

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<sup>19</sup>“U.S. Healthcare System Pinched by Nursing Shortage,” Reuters, March 8, 2009.

<sup>20</sup>“Secretary Sebelius Makes Recovery Act Funding Available to Expand Health Professions Training,” Department of Health & Human Services News Release, July 28, 2009.

<sup>21</sup>“Unemployed seek training for green-collar jobs,” Associated Press, May 23, 2009.

three decades, those with some college education but no degree enjoy little economic advantage.

In his Joint Address to Congress, President Obama was right to challenge young Americans: “Dropping out of high school is no longer an option. It’s not just quitting on yourself, it’s quitting on your country.” The same challenge should hold true for dropping out of college. We need a national crusade to reduce high school and college dropouts at the same time.

### *3. REFORM HIGHER EDUCATION ASSISTANCE PROGRAMS TO REWARD AND DEMAND COLLEGE COMPLETION, NOT JUST SHOWING UP.*

We must rethink the way we pay for college to insist from institutions and students alike that, in return for assistance, we expect graduation with a degree. Taxpayers would never stand for a transportation system that kept paying for roads that were never finished and bridges that stopped halfway to the other side. We shouldn’t settle for a higher education system that takes money from students, their families, and the government, but pays no mind to whether institutions and students actually finish what they start.

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President Obama’s *American Graduation Initiative* establishes a College Access and Completion Fund to promote and evaluate efforts to increase college graduation rates, close achievement gaps, and track student progress in college and in the workplace. The next step will be to transform higher education assistance to make graduation a national priority and universal expectation for students and institutions alike.

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For example, the DLC’s *American Dream Initiative* proposed a performance-based block grant to produce a million more college and community college graduates a year by awarding states money based on the number of students that attend and graduate from their colleges and universities. In *The Plan: Big Ideas to Change America*, Rahm Emanuel and Bruce Reed called for a performance-based block grant on the scale of the land-grant act that President Lincoln signed into law in 1862.

### *4. MAKE THE AMERICAN OPPORTUNITY TAX CREDIT FULLY REFUNDABLE AND MORE GENEROUS.*

Economics drive many students to leave college without finishing: they need to start earning right away and feel anxious over mounting debt. The current recession has already exacerbated this issue for some students and parents. According to a survey by the American Association of Collegiate Registrars and Admissions Officers, more than 65 percent of respondents noted an increase in unpaid bills this year, and most schools do not let students enroll in the next semester until the previous

semester's bills have been paid.<sup>22</sup>

One thing we can do today to spur economic recovery and lower the dropout rate is to help make community college affordable. The Obama administration's *American Opportunity Tax Credit* (AOTC) is a great start, but we should go further by making it fully refundable and more generous. For example, we should consolidate five existing tax incentives (not including the various college savings plans) that help families pay the cost of tuition at America's colleges and universities into the AOTC. Doing so would not only provide more benefits to students, but would also help simplify the tax code.

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We should also challenge states to hold the line on the cost of public community colleges until the recession ends. Unfortunately, a number of public community colleges have been forced to raise tuition or turn students away. For example, Virginia community colleges are hiking tuition 7.6 percent<sup>23</sup> and, effective this summer, in-state tuition for North Carolina's 50 community colleges will jump from \$42 per credit hour to \$50 – a 16 percent increase.<sup>24</sup> Meanwhile, in a number of states with open enrollment, such as California and Florida, students are being turned away by the thousands as schools try to hold budgets constant.<sup>25</sup>

#### *5. OFFER STATES JOB TRAINING PROGRAM WAIVERS IN RETURN FOR GETTING MORE OF AMERICA'S WORKERS THE SKILLS THEY NEED TO EXCEL IN THE NEW JOBS MARKET.*

Despite several efforts at reform, America's job training assistance system remains a conflagration of stove-piped programs and funding streams – each with its own regulations, performance standards, and reporting requirements. This makes it difficult to effect real integration, and provide workers with the skills really needed in the private sector.

It's time to reform our job training system to one that empowers states and localities to implement new, innovative approaches to skills development. That's why Congress should provide the administration with broad waiver authority. With it, the Administration could grant waivers to states that have a demonstrable plan to increase the number of workers who receive training and learn skills that lead to new jobs.

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<sup>22</sup>Clark, Kim. "Unpaid College Tuition Bills Rise, Survey Finds," U.S. News & World Report online, January 9, 2009.

<sup>23</sup>"Stimulus eases community college troubles," Stateline.org, July 2, 2009.

<sup>24</sup>"Still bargain, despite tuition increase," Southwestern Community College, July 09 News.

<sup>25</sup>"Stimulus eases community college troubles," Stateline.org, July 2, 2009 and "Bleak Economy Squeezes Community Colleges," National Public Radio, July 10, 2009.

## CONCLUSION

As President Obama said in announcing the *American Graduation Initiative*, “Now is the time to build a firmer, stronger foundation for growth that will not only withstand future economic storms, but that will help us thrive and compete in a global economy.” America is poised to create the jobs of the future – so long as we do our part now to make sure all Americans have the chance to get the degrees and skills of the future they need.

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APPENDIX

TABLE 3: ASSOCIATE DEGREE AND POSTSECONDARY VOCATIONAL HOT JOBS  
(NUMBERS IN THOUSANDS)

| 2006 NATIONAL EMPLOYMENT MATRIX TITLE                              | EMPLOYMENT 2006 | EMPLOYMENT 2016 | NUMERIC CHANGE | PERCENTAGE CHANGE | 2006 MEDIAN ANNUAL WAGES (\$) | MOST SIGNIFICANT SOURCE OF EDUCATION OR TRAINING |
|--|-----------------|-----------------|----------------|-------------------|-------------------------------|--|
| Physical therapist assistants                                      | 60              | 80              | 20             | 32.4              | 41,360                        | Associate degree                                 |
| Dental hygienists  | 167             | 217             | 50             | 30.1              | 62,800                        | Associate degree                                 |
| Environmental science and protection technicians, including health | 36              | 47              | 10             | 28.0              | 38,090                        | Associate degree                                 |
| Cardiovascular technologists and technicians                       | 45              | 57              | 12             | 25.5              | 42,300                        | Associate degree                                 |
| Occupational therapist assistants                                  | 25              | 31              | 6              | 25.4              | 42,060                        | Associate degree                                 |
| Radiation therapists   | 15              | 18              | 4              | 24.8              | 66,170                        | Associate degree                                 |
| Environmental engineering technicians                              | 21              | 26              | 5              | 24.8              | 40,560                        | Associate degree                                 |
| Court reporters  | 19              | 24              | 5              | 24.5              | 45,610                        | Postsecondary vocational award                   |
| Surgical technologists   | 86              | 107             | 21             | 24.5              | 36,080                        | Postsecondary vocational award                   |
| Registered nurses  | 2,505           | 3,092           | 587            | 23.5              | 57,280                        | Associate degree                                 |
| Respiratory therapists   | 102             | 126             | 23             | 22.6              | 47,420                        | Associate degree                                 |
| Paralegals and legal assistants                                    | 238             | 291             | 53             | 22.2              | 43,040                        | Associate degree                                 |
| Medical equipment repairers  | 38              | 46              | 8              | 21.7              | 40,580                        | Associate degree                                 |
| Massage therapists   | 118             | 142             | 24             | 20.3              | 33,400                        | Postsecondary vocational award                   |
| Security and fire alarm systems installers                         | 57              | 68              | 11             | 20.2              | 34,810                        | Postsecondary vocational award                   |
| Interior designers   | 72              | 86              | 14             | 19.5              | 42,260                        | Associate degree                                 |
| Diagnostic medical sonographers                                    | 46              | 54              | 9              | 19.1              | 57,160                        | Associate degree                                 |

At a Glance

- 37 of the 230 “hot jobs” – nearly 1 in 6 – require associate degrees or postsecondary vocational awards.
- The average median wage for “hot jobs” that require associate degrees or postsecondary vocational awards is \$44,315, more than \$12,000 above the average median wage for all jobs.

| 2006 NATIONAL EMPLOYMENT MATRIX TITLE                   | EMPLOYMENT 2006 | EMPLOYMENT 2016 | NUMERIC CHANGE | PERCENTAGE CHANGE | 2006 MEDIAN ANNUAL WAGES (\$) | MOST SIGNIFICANT SOURCE OF EDUCATION OR TRAINING |
|---|-----------------|-----------------|----------------|-------------------|-------------------------------|--|
| Commercial divers                                       | 3               | 4               | 1              | 17.7              | 39,590                        | Postsecondary vocational award                   |
| Computer specialists, all other                         | 136             | 157             | 21             | 15.1              | 68,570                        | Associate degree                                 |
| Radiologic technologists and technicians                | 196             | 226             | 30             | 15.1              | 48,170                        | Associate degree                                 |
| Healthcare technologists and technicians, all other     | 79              | 91              | 12             | 15.0              | 35,140                        | Postsecondary vocational award                   |
| Medical and clinical laboratory technicians             | 151             | 174             | 23             | 15.0              | 32,840                        | Associate degree                                 |
| Nuclear medicine technologists                          | 20              | 23              | 3              | 14.8              | 62,300                        | Associate degree                                 |
| Embalmers   | 9               | 10              | 1              | 14.3              | 37,840                        | Postsecondary vocational award                   |
| Automotive service technicians and mechanics            | 773             | 883             | 110            | 14.3              | 33,780                        | Postsecondary vocational award                   |
| Licensed practical and licensed vocational nurses       | 749             | 854             | 105            | 14.0              | 36,550                        | Postsecondary vocational award                   |
| Computer support specialists                            | 552             | 624             | 71             | 12.9              | 41,470                        | Associate degree                                 |
| Funeral directors                                       | 29              | 32              | 4              | 12.5              | 49,620                        | Associate degree                                 |
| Insurance appraisers, auto damage                       | 13              | 15              | 2              | 12.5              | 49,180                        | Postsecondary vocational award                   |
| Social science research assistants                      | 18              | 20              | 2              | 12.4              | 33,860                        | Associate degree                                 |
| Legal secretaries                                       | 275             | 308             | 32             | 11.7              | 38,190                        | Associate degree                                 |
| Camera operators, television, video, and motion picture | 27              | 30              | 3              | 11.5              | 40,060                        | Postsecondary vocational award                   |
| Bus and truck mechanics and diesel engine specialists   | 275             | 306             | 32             | 11.5              | 37,660                        | Postsecondary vocational award                   |
| Drafters, all other                                     | 25              | 27              | 3              | 11.0              | 43,060                        | Postsecondary vocational award                   |

| 2006 NATIONAL EMPLOYMENT MATRIX TITLE            | EMPLOYMENT 2006 | EMPLOYMENT 2016 | NUMERIC CHANGE | PERCENTAGE CHANGE | 2006 MEDIAN ANNUAL WAGES (\$) | MOST SIGNIFICANT SOURCE OF EDUCATION OR TRAINING |
|--|-----------------|-----------------|----------------|-------------------|-------------------------------|--|
| Aircraft mechanics and service technicians       | 122             | 135             | 13             | 10.6              | 47,740                        | Postsecondary vocational award                   |
| Real estate sales agents                         | 432             | 478             | 46             | 10.6              | 39,760                        | Postsecondary vocational award                   |
| Aerospace engineering and operations technicians | 9               | 9               | 1              | 10.4              | 53,300                        | Associate degree                                 |

Source: Bureau of Labor Statistics, Occupational Outlook Handbook, 2008-09 Edition.

At a Glance

- 1 in 3 job titles on the list of health care and education “hot jobs” requires an associate degree or a postsecondary vocational award.
- 7 of the 11 health care jobs requiring an associate degree pay above \$45,000.

*TABLE 4: HEALTH CARE AND EDUCATION HOT JOBS (NUMBERS IN THOUSANDS)*

| 2006 NATIONAL EMPLOYMENT MATRIX TITLE                                      | EMPLOYMENT 2006 | EMPLOYMENT 2016 | NUMERIC CHANGE | PERCENTAGE CHANGE | 2006 MEDIAN ANNUAL WAGES (\$) | MOST SIGNIFICANT SOURCE OF EDUCATION OR TRAINING  |
|--|-----------------|-----------------|----------------|-------------------|-------------------------------|---|
| Physical therapist assistants  | 60              | 80              | 20             | 32.4              | 41,360                        | Associate degree                                  |
| Dental hygienists  | 167             | 217             | 50             | 30.1              | 62,800                        | Associate degree                                  |
| Physical therapists  | 173             | 220             | 47             | 27.1              | 66,200                        | Master's degree                                   |
| Physician assistants   | 66              | 83              | 18             | 27                | 74,980                        | Master's degree                                   |
| Cardiovascular technologists and technicians                               | 45              | 57              | 12             | 25.5              | 42,300                        | Associate degree                                  |
| Occupational therapist assistants  | 25              | 31              | 6              | 25.4              | 42,060                        | Associate degree                                  |
| Radiation therapists   | 15              | 18              | 4              | 24.8              | 66,170                        | Associate degree                                  |
| Surgical technologists   | 86              | 107             | 21             | 24.5              | 36,080                        | Postsecondary vocational award                    |
| Registered nurses  | 2,505           | 3,092           | 587            | 23.5              | 57,280                        | Associate degree                                  |
| Education administrators, preschool and child care center/program          | 56              | 69              | 13             | 23.5              | 37,740                        | Bachelor's or higher degree, plus work experience |
| Occupational therapists  | 99              | 122             | 23             | 23.1              | 60,470                        | Master's degree                                   |
| Postsecondary teachers   | 1,672           | 2,054           | 382            | 22.9              | 56,120                        | Doctoral degree                                   |
| Respiratory therapists   | 102             | 126             | 23             | 22.6              | 47,420                        | Associate degree                                  |
| Instructional coordinators   | 129             | 159             | 29             | 22.5              | 52,790                        | Master's degree                                   |
| Pharmacists  | 243             | 296             | 53             | 21.7              | 94,520                        | First professional degree                         |
| Special education teachers, preschool, kindergarten, and elementary school | 219             | 262             | 43             | 19.6              | 46,360                        | Bachelor's degree                                 |
| Diagnostic medical sonographers  | 46              | 54              | 9              | 19.1              | 57,160                        | Associate degree                                  |
| Medical and health services managers                                       | 262             | 305             | 43             | 16.4              | 73,340                        | Bachelor's or higher degree, plus work experience |

| 2006 NATIONAL EMPLOYMENT MATRIX TITLE                                | EMPLOYMENT 2006 | EMPLOYMENT 2016 | NUMERIC CHANGE | PERCENTAGE CHANGE | 2006 MEDIAN ANNUAL WAGES (\$) | MOST SIGNIFICANT SOURCE OF EDUCATION OR TRAINING  |
|--|-----------------|-----------------|----------------|-------------------|-------------------------------|---|
| Kindergarten teachers, except special education                      | 170             | 198             | 28             | 16.3              | 43,580                        | Bachelor's degree                                 |
| Special education teachers, middle school                            | 102             | 118             | 16             | 15.8              | 47,650                        | Bachelor's degree                                 |
| Radiologic technologists and technicians                             | 196             | 226             | 30             | 15.1              | 48,170                        | Associate degree                                  |
| Healthcare technologists and technicians, all other                  | 79              | 91              | 12             | 15                | 35,140                        | Postsecondary vocational award                    |
| Medical and clinical laboratory technicians                          | 151             | 174             | 23             | 15                | 32,840                        | Associate degree                                  |
| Nuclear medicine technologists                                       | 20              | 23              | 3              | 14.8              | 62,300                        | Associate degree                                  |
| Healthcare practitioners and technical workers, all other            | 53              | 61              | 8              | 14.8              | 37,200                        | Bachelor's degree                                 |
| Occupational health and safety technicians                           | 10              | 12              | 2              | 14.6              | 42,160                        | Bachelor's degree                                 |
| Chiropractors  | 53              | 60              | 8              | 14.4              | 65,220                        | First professional degree                         |
| Education administrators, postsecondary                              | 131             | 150             | 19             | 14.2              | 73,990                        | Bachelor's or higher degree, plus work experience |
| Adult literacy, remedial education, and GED teachers and instructors | 76              | 87              | 11             | 14.2              | 43,910                        | Bachelor's degree                                 |
| Physicians and surgeons  | 633             | 723             | 90             | 14.2              | N/A                           | First professional degree                         |
| Licensed practical and licensed vocational nurses                    | 749             | 854             | 105            | 14                | 36,550                        | Postsecondary vocational award                    |
| Elementary school teachers, except special education                 | 1,540           | 1,749           | 209            | 13.6              | 45,570                        | Bachelor's degree                                 |
| Education administrators, all other                                  | 30              | 33              | 4              | 12.6              | 66,620                        | Bachelor's or higher degree, plus work experience |

| 2006 NATIONAL EMPLOYMENT MATRIX TITLE                           | EMPLOYMENT 2006 | EMPLOYMENT 2016 | NUMERIC CHANGE | PERCENTAGE CHANGE | 2006 MEDIAN ANNUAL WAGES (\$) | MOST SIGNIFICANT SOURCE OF EDUCATION OR TRAINING |
|---|-----------------|-----------------|----------------|-------------------|-------------------------------|--|
| Medical and clinical laboratory technologists                   | 167             | 188             | 21             | 12.4              | 49,700                        | Bachelor's degree                                |
| Health diagnosing and treating practitioners, all other         | 65              | 73              | 8              | 11.8              | 61,570                        | Bachelor's degree                                |
| Orthotists and prosthetists                                     | 6               | 6               | 1              | 11.8              | 58,980                        | Bachelor's degree                                |
| Optometrists  | 33              | 36              | 4              | 11.3              | 91,040                        | First professional degree                        |
| Middle school teachers, except special and vocational education | 658             | 732             | 74             | 11.2              | 46,300                        | Bachelor's degree                                |
| Prosthodontists   | 1               | 1               | 0              | 10.7              | N/A                           | First professional degree                        |
| Speech-language pathologists                                    | 110             | 121             | 12             | 10.6              | 57,710                        | Master's degree                                  |
| Education, training, and library workers, all other             | 99              | 110             | 10             | 10.5              | 32,160                        | Bachelor's degree                                |

Source: Bureau of Labor Statistics, Occupational Outlook Handbook, 2008-09 Edition.



At a Glance

- Average growth for IT “hot jobs” will be 26%.
- Most IT “hot jobs” require bachelor’s degrees, but in 2006, associate degree holders working as computer specialists earned \$68,570.
- The average median wage in 2006 for jobs on the IT “hot jobs” list was \$71,415.

*TABLE 5: INFORMATION TECHNOLOGY HOT JOBS (NUMBERS IN THOUSANDS)*

| 2006 NATIONAL EMPLOYMENT MATRIX TITLE            | EMPLOYMENT 2006 | EMPLOYMENT 2016 | NUMERIC CHANGE | PERCENTAGE CHANGE | 2006 MEDIAN ANNUAL WAGES (\$) | MOST SIGNIFICANT SOURCE OF EDUCATION OR TRAINING  |
|--|-----------------|-----------------|----------------|-------------------|-------------------------------|---|
| Network systems and data communications analysts | 262             | 402             | 140            | 53.4              | 64,600                        | Bachelor's degree                                 |
| Computer software engineers, applications        | 507             | 733             | 226            | 44.6              | 79,780                        | Bachelor's degree                                 |
| Computer systems analysts                        | 504             | 650             | 146            | 29                | 69,760                        | Bachelor's degree                                 |
| Database administrators                          | 119             | 154             | 34             | 28.6              | 64,670                        | Bachelor's degree                                 |
| Computer software engineers, systems software    | 350             | 449             | 99             | 28.2              | 85,370                        | Bachelor's degree                                 |
| Network and computer systems administrators      | 309             | 393             | 83             | 27                | 62,130                        | Bachelor's degree                                 |
| Computer and information scientists, research    | 25              | 31              | 5              | 21.5              | 93,950                        | Doctoral degree                                   |
| Computer and information systems managers        | 264             | 307             | 43             | 16.4              | 101,580                       | Bachelor's or higher degree, plus work experience |
| Computer specialists, all other                  | 136             | 157             | 21             | 15.1              | 68,570                        | Associate degree                                  |
| Computer support specialists                     | 552             | 624             | 71             | 12.9              | 41,470                        | Associate degree                                  |
| Financial specialists, all other                 | 129             | 144             | 15             | 11.8              | 53,680                        | Bachelor's degree                                 |

Source: Bureau of Labor Statistics, Occupational Outlook Handbook, 2008-09 Edition.