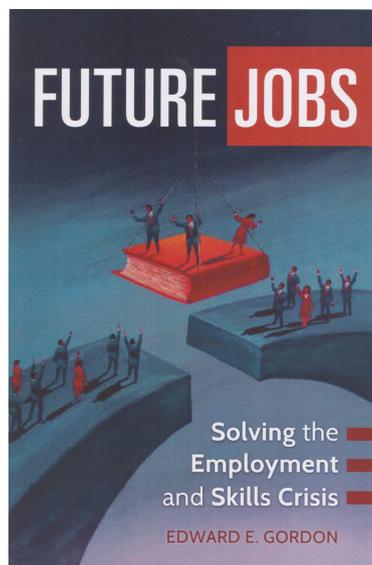


**7,000,000 jobs go unfilled every day. That number will, under conservative estimates, double in the next six years to 14 million.**

**A new book warns of the *jobs cliff* --and reveals a comprehensive, proven solution to stave off an economic meltdown.**

## **America's Economic Dominance Threatened by Crushing Skilled Labor Shortage**



America is at a crucial employment tipping point – trillions of dollars in economic growth as well as the survival of millions of businesses and careers are at stake.

“The United States and the world are locked into a structural labor market race between advanced technology on one side and demographics and education on the other,” asserts Edward Gordon. “By the end of this decade, many businesses will no longer have the talent needed to sustain themselves.”

Gordon has been the Paul Revere of the next revolution, one involving jobs and America’s ability to position itself for the next great economic era. For much of the past two decades, Gordon has consulted with corporate leaders, educators, government agencies, and NGOs, sounding the alarm bell of an impending crisis – the skill wars that are now negating the economy’s ability to grow and remain globally strong. But these dire warnings, though largely unheeded, are now coming true. His newest book, *Future Jobs: Solving the Employment and Skills Crisis* (Praeger, September 2013), offers a thorough look at the converging forces behind the skilled labor shortage crunch and presents a comprehensive, proven solution that can help America remain competitive and create millions of jobs. The answer, however, is nothing short of revolutionary, in terms of how business and government will work together, how education will be reformed, and how workers will determine their career fate.

“We’ve entered a new era, where we will no longer see well-paying, low-skilled or semi-skilled blue-collar factory or service jobs filled by high school graduates or even dropouts,” says Gordon. “We’re in a highly-skilled age, where knowledge labor rules, where innovations and intelligent machines not only influence society but define and impact businesses and the labor force they employ.”

Gordon shares the following:

- Insight on why the jobs recovery from the Great Recession will stall for the rest of the decade.
- Which countries – and industries – are in the best position to win the global talent showdown.
- How businesses, communities, schools, and government can partner to rebuild the jobs pipeline.
- Why we are on the precipice of a jobs cliff – a point where our nation’s economic growth is threatened not by a lack of jobs, but of people qualified to fill millions of open positions.
- Why outsourcing, immigration, or employee poaching won’t solve the problem.
- What parents of high school-bound and college-age kids need to know in order to guide their career choices.
- Dozens of examples of how communities, companies, colleges, and governments are coming together to successfully bridge the job skills gap and talent disconnect with RETAINs (Regional Talent Innovation Networks).
- Why the current talent creation system of education-to-employment is broken – and how to fix it.
- How innovation and technology will outpace our ability to use it and employ it in the workplace.
- Provides insight on the workforce landscape of 2020.
- Identifies the “hot jobs” of the current decade and the requisite skills and educational preparation needed to obtain them.

The Great Recession has accelerated an ongoing labor market shift that was masked by the many low-or semi-skilled jobs created during the housing/financial bubble. In today’s labor market, employment for low- or semi-skilled workers has fallen dramatically. Even middle-skilled professionals have seen a steady decline in jobs because of automation. In general, the job opportunities are brighter for high-skilled people who have kept their knowledge and applicable certifications up-to-date and who can relocate to where jobs exist.

“The talent crunch means millions of young and older workers will remain unemployable or trapped in low-paying jobs,” concludes Gordon. “America’s dominance in IT, aerospace, biosciences, and high-tech industries is seriously threatened. The time for action is today, before other skilled foreign competitors take away our future.”

“He argues that corporations should be allowed to depreciate their investments in human capital just as they can depreciate (physical) capital investments. The relentlessness of the pressure to achieve positive quarterly financial performance incents companies to minimize expenses to the extent that they can. Allowing training investments to depreciate over a reasonable time frame would improve quarterly profits by spreading the direct costs of training and even the wage costs of training participants over multiple quarters. This simple accounting change would inculcate corporate attitudes of growing their own, rather than poaching talent from competitors.”

**--Kevin Hollenbeck, W.E. Upjohn Institute for Employment Research, Foreword**

**Publication: *Future Jobs: Solving the Employment and Skills Crisis* by Edward E. Gordon  
Praeger, September 2013; cloth; \$37.00; 203 pages; ISBN: 978-1-4408-2933-8**

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# Edward E. Gordon

## Biography



Edward E. Gordon has consulted with leaders in business, education, government and non-profits for over 40 years. The culmination of his work as a visionary who applies a multi-disciplinary approach to today's complex workforce needs and economic development issues can be found in his newest book, *Future Jobs: Solving the Employment & Skills Crisis*.

Gordon, the founder and president of Imperial Consulting Corporation (in Chicago and Palm Desert, CA), is a human capital management expert who is internationally recognized as an authority on how talent discovery, career planning, and training relate to business and economic development. As a writer, researcher, speaker, and consultant he has helped shape policy and impact business development.

He has helped hundreds of clients, including Fortune 500 companies, as well as: Microsoft, PricewaterhouseCoopers, the Federal Reserve, Motorola, Metra Rail, the American Institute for Research, the U.S. Departments of Education and Labor, state agencies of California, Delaware, Indiana, Kansas, New York, North Carolina, Pennsylvania, and South Carolina, as well as universities, school systems, non-profit organizations, and trade or professional associations.

Gordon is the author or co-author of 18 books including *Winning the Global Talent Showdown*, *The 2010 Meltdown*, *Skill Wars*, *FutureWork*, *Closing the Literacy Gap in American Business*, *Opportunities in Training and Development Careers*, *Literacy in America*, *The Tutoring Revolution*, *Peer Tutoring: A Teacher's Resource Guide* and *Tutor Quest*. He has been quoted in or written over 300 articles for major newspapers such as *USA Today*, the *Wall Street Journal*, the *New York Times*, *Washington Post*, *Boston Globe*, and *Investor's Business Daily*, and popular magazines, business publications, and education journals, including *The Futurist*, *M World*, *Talent Management*, *Training*, *HR Magazine*, and *Employment Relations Today* as well as in the documentary film "Waiting for Superman." His media experience includes the CBS Network's *The Early Show*, PBS, CNN, NBC, Bloomberg TV, WGN, NPR, USA Radio, and Yahoo! As a professional speaker, he has been heard by over 350,000 people and millions on television and radio.

Gordon has taught courses in business, psychology, and history for 20 years at three Chicago-area universities: DePaul, Loyola, and Northwestern. He currently is on the Executive Board of the Chicago Renaissance Manufacturing Council, the Advisory Board of the Coachella Valley Economic Partnership (Palm Springs, CA area), and the Advisory Board of the Catholic Charities of Chicago. Gordon previously served on the Board of Directors of the Better Business Bureau of Chicago and Northern Illinois, the Board of Trustees of Moraine Valley Community College, the Board of Directors of the Illinois Literacy Resource Development Center, and the Youth Policy Committee of the Chicago Workforce Board.

He holds a Ph.D. in History/Psychology, graduating Magna cum Laude from Loyola University in Chicago, and an M.A. in History, graduating Magna cum Laude from DePaul University in Chicago.

For more information, go to [www.imperialcorp.com](http://www.imperialcorp.com).

# Ed Gordon

## Q&A

### *Future Jobs*

**1. Why have corporations, schools, governments been so slow to move on the jobs crisis?** Society has been in denial. Public opinion will only begin to shift as the majority of people become directly caught up in this unfolding jobs revolution. But now we have reached an employment tipping point. The broad requirements of the U.S. job market can no longer be supplied simply by maintaining the current failing system. The United States and the world are locked into a structural labor market race between advanced technology on one side and demographics and education on the other. Too few Americans are prepared to run in this race. By the end of this decade, many businesses will no longer have the talent they need to sustain themselves. Around the world, workers and businesses are caught up in a transitional labor market era. In this new era, the success or failure of individual businesses and of regional or national economies will largely be determined by their ability to provide more people who can meet labor market requirements with the right skills at the right time.

**2. How does *Future Jobs* propose a solution?** *Future Jobs* explores the concept behind Regional Talent Innovation Networks (RETAINs) and their credibility as a major labor market change engine. RETAINs are community intermediaries. They act as hubs for cross-sector partnerships engaged in a systemic redesign that matches skills and jobs to regional economic development. RETAINs facilitate broader civic engagement by forging links between businesses, educators, community leaders, and ordinary citizens.

**3. Why do millions of jobs go unfilled when so many people remain unemployed or underemployed?** The American education-to-employment system is largely failing to prepare more people with the required skills to compete in this new labor market era. Laid-off workers often lack the skills to move into jobs in growing sectors of the economy. Businesses and government job training programs are largely inconsistent, short term, or too generic. Too many younger workers lack general education and specialized career skills, let alone a strong work ethic, to sustain a middle class standard of living. They are now adding to the growing American underclass. “We have underemployment, part-time work, people leaving the labor force, reduced participation, more long-term unemployment,” said Fed Chairman Ben Bernanke (June 2013). This could mean that the U.S. unemployment rate issued each month is “not exactly representative of the state of the labor market,” he said. In 2013, over 30 million Americans of working age are unemployed or underemployed with millions more not part of the U.S. labor market. The number of people looking for work (labor participation rate) was near the historic low of 63.5 percent, while the average duration of unemployment remained near historic highs.

**4. Why can't we import qualified workers to handle these jobs?** Until recently, U.S. businesses have bridged the skills deficit by using the twin talent safety valves of importing educated workers or exporting overseas high-pay/high-skills jobs wherever they could find a skilled talent pool. These talent safety valves are beginning to fail in part because this is also an international jobs–talent issue. The World Economic Forum (2011) predicts that this disconnect will persist for decades and the worst global talent shortages are yet to come. The populations of Japan, South Korea, and many European nations are in decline. India and China are moving into more sophisticated high tech manufacturing or IT services. They both are now encountering severe shortages of engineers, scientists, and technicians with the requisite

educational preparation due to their deficient public education systems and the inadequate quality of institutions of higher learning.

**5. OK, then can we outsource our way out of it?** As stated in the last answer, skilled talent is in short supply everywhere. In China wages are rising, and corruption adds significantly to the costs of doing business in both India and China. Reshoring or bringing jobs back to the U.S. is gaining momentum. A reshoring trend, says Boston Consulting, is likely to bring up to 3 million manufacturing jobs back to the U.S. from overseas by 2020. Chinese wages have been increasing at 18 percent annually for the last 10 years. Much of that cost savings is now gone. Other factors in reshoring are a desire to get products to market faster, a more rapid response to customer orders, savings from reduced transportation and warehousing, improved quality, reduced theft of trade secrets, and the elimination of bribes paid to corrupt foreign officials. A Hackett Group research study (2012) found that the cost gap between the U.S. and China has shrunk by nearly 50 percent over the past 8 years, and is expected to stand at only 16 percent by 2013. However, U.S. reshoring will only occur if we have the skilled workers to do these jobs.

**6. How will government, education, business, and nonprofits need to work together to stave off the growing job skills gap?** RETAINs break down the silos separating these and other segments of communities so they can unite to address problems arising in times of regional crisis including population and business flight, local economic stagnation, and declining tax bases. Communities want to “retain” their life, viability, and spirit to build a better, hopeful future. To do this, they must update their local talent, develop their capacity to innovate and also attract new businesses into a region. From their beginnings in the 1990s, the RETAINs movement has been about much more than just economic development, or school reform, or tax reform. RETAINs are regional, cross-sector, public-private partnership hubs. They do not duplicate services already exist. They act as non-profit intermediaries, rebuilding the pipeline that connects people to the job market and filling in the gaps. RETAINs are reinventing a 21st-century education-to-employment talent-creation system that can support a tech-driven, knowledge-based economy. RETAINs are joint collaborations in community building. The key words here are “bottom-up collaboration” defined as joint authority, joint responsibility, and joint accountability among all the partners.

**7. Are there models of success that have embraced your RETAINs approach?** Transformation is never easy. Changing a region’s employment and cultural outlook takes both time and perseverance. In many cases, a local crisis pushed a community to take action on the talent front. The individual leadership shown in each instance depicts how civic activism can take many different creative paths to achieve meaningful change. All of these Regional Talent Innovation Networks (RETAINs) and other talent initiatives are still works in progress. But they have sustained support through their initial stages and are making advances in transforming their education-to-employment system for the talent requirements of a 21st-century workforce. They include: regions of North Dakota; High School Inc., Santa Ana, CA; the New North in northeast Wisconsin; the Vermilion Advantage, Danville, IL; Partners for a Competitive Workforce, Cincinnati, OH; and about 1,000 other RETAINs across the U.S.

**8. Was the Great Recession a game changer for the labor landscape?** The spread of digital technologies through almost every type of industry had meant the U.S. business has less and less use for people with minimal education. The Great Recession has accelerated an ongoing labor market shift that was masked by the many low- or semi-skilled jobs created during the housing/financial bubble. In today’s labor market, employment for low- or semi-skilled workers has fallen dramatically. Even middle-skilled professionals have seen a steady decline in jobs because of automation. In general, the job opportunities are brighter for high-skilled people who have kept their knowledge and applicable certifications up-to-date and who can relocate to where jobs exist. Increasing computer power requires more people with increased brain power.

**9. Which industries are growing to the point qualified labor shortages will cause them to stall?**

There are four sectors of the U.S. economy in which the skills crisis is particularly acute. Each has its own special problems and needs. **HEALTH CARE:** To cope with a rapidly aging population, the Bureau of Labor Statistics (BLS) estimates that by 2020 jobs in health care occupations, including doctors, nurses, pharmacists, lab technicians, therapists, dentists and many allied career areas, will grow by over 20 percent. **IT:** Gartner, a technology research company, expects 1.9 million IT jobs to be created in the United States between 2012 and 2015. **AEROSPACE:** As airlines seek more fuel-efficient planes, they have placed a record number of orders for Boeing's new 787 Dreamliner and the European Airbus 380. However, both companies now face significant worker shortages. **MANUFACTURING:** U.S. manufacturing employs over 11 million Americans as well as seven million in related industries. But nearly 2.7 million U.S. manufacturing employees were age 55 or older in 2011. As many as 600,000 skilled technical positions in U.S. manufacturing were vacant, according to a Manufacturing Institute and Deloitte Consulting 2011 study.

**10. If you were advising parents of teenagers, which fields of study would you recommend they encourage their children to pursue?**

The first consideration is what career sectors will be in demand between now and 2020. Occupational projections and surveys by government, universities, and business research organizations point to five general growth areas that are part of almost every U.S. industry: (1) research and development, (2) information technology, (3) operations, (4) management, and (5) sales. Science, technology, engineering, and mathematics (STEM)-related occupations will experience significant growth. The U.S. Commerce Department estimates that by 2018 STEM employment will grow by 17 percent, compared to 9.8 percent for other occupations. Surveys conducted by the Society for Human Resource Management in 2011 and 2012 report shortages of engineers, sales representatives, accounting, and finance staff. High-skilled technical positions and scientists also occupied top spots in these surveys. Other sources point to growing shortages for health care professionals and management staff in biomedical and life science areas due to the aging of the large baby boomer cohort.

**11. If the jobs skills cliff is impacting nations globally, why will the US be injured by it any more than other countries?**

We are in a watershed era of historical transformation driven by major technological advances. The key challenge is rethinking how we create stronger learning skills for more people. The United States has the world's largest and most advanced knowledge economy. We need more people to become "well educated" than ever before. What is the bottom line for talent in 2020? The United States can expect a skilled talent shortfall of between 14 and 25 million workers to fill new and replacement jobs. Between 2020 and 2030, the Boston Consulting Group predicts high to very high talent shortages across the United States in many economic sectors, including: IT, business services, health care, public administration, education, financial services, hotels and restaurants, transport, communications, trade, construction, manufacturing, utilities, and other businesses. Such a scenario will devastate the entire economy and may create an expanding poverty cycle. Unless a new talent creation system is in place by 2020 that has begun to alter those conditions, major social unrest across America will become a distinct possibility.

**12. Has our society fully confronted the structural alterations to the economy as we've transitioned from agrarian to industrial to information technology-based?**

Over 100 years ago, the United States developed its current education-to-employment system. From 1890 to 1920, the nation's economy shifted from being primarily agricultural to one based on industrial production. Community, business, and political leaders came to see the links between supporting compulsory public schooling and social progress. The United States was the first nation in history to attempt to create and support such an education-to-employment system. Here's how it worked. Since 1970, about 25 percent of the population graduated from college; 40 percent graduated from high school, some going on to additional technical or postsecondary education; the bottom 35–40 percent had a hard time in school, and more dropped out with each passing decade of the century. Now, times have changed. In every type of business, there is a

demand for knowledge workers (i.e., persons with specialized career training and a sound liberal arts education). With job content changing so fast in every field, continuing education updates and greater mental dexterity is a necessity for almost every worker. Many still fail to grasp that technological progress is occurring too fast for labor markets and current talent-creation systems to meaningfully adjust. These talent problems are structural. They also are systemic. U.S. businesses will make big gains as they find better ways to use new technologies, but only if they relearn the importance of investing in the education and training that workers and students need for this new jobs era.

**13. How are the changing demographics of America impacting the job market?** Seventy-nine million Baby Boomers will retire in the next 20 years. That is about 10,000 a day for two decades. The challenges posed by their exodus from the workforce are not confined to a decline in numbers, but in education and skill levels as well. Due to the Cold War and the Space Race with the former Soviet Union, the National Defense Act (1957) funded a variety of math and science programs at all levels of education. However, by the late 1970s, much of America's emphasis on math and science education waned. The Boomers generation in 1972 attained an 83 percent national high school graduation rate: in the following decades, this declined among the Gen Xers and Millennials bottoming out at 72 percent in 2011. Anthony Carnevale at Georgetown University has projected that by 2018 Americans will produce three million fewer college graduates and 4.7 million fewer postsecondary certificate graduates than demanded by the economy.

**14. Why do you boldly claim that by the end of the decade many businesses will no longer have the talent they need to sustain themselves?** In 1990, the Organization for Economic Co-operation and Development (OECD) ranked the United States first in the world in the percentage of 25-34 year-olds with college degrees. By 2010, the United States had slipped to 14 among OECD nations. One million American students drop out of high school each year. Although there has been some improvement in U.S. dropout rates, a 2012 OECD report ranked the United States 22nd among 27 developed countries in its rate of high school completion. By 2020, the U.S. job market will be sharply and unevenly divided. Seventy-five percent of the available jobs will require higher skills and offer higher pay. Approximately, 122 million workers will be needed to fill them. Fifty-five million will be qualified with another 43 million semi-qualified (if further trained) to fill these positions (i.e., 98 million workers in all). At the same time, only about 25 percent of the available jobs will need lower skills and offer lower pay. About 41 million workers will be needed. However, 64 million Americans will possess only low skills.

**15. How do we help overcome the objections of business to training their workers?** Businesses frequently object that if you train employees, they will be poached. Exit interview research, however, finds that lack of training and workplace mentoring drives them away. This is particularly true among the young and skilled. Training can improve younger worker's loyalty, if it is also clearly linked to a future career path. If not, they will take their skills and education to another company that better maps out their potential for the future. To the objection that training results can't be measured financially, ROI (Return-on-Investment) models provide contrary evidence. Our research has shown that training needs to be targeted to specific employee performance issues. There are many ROI methods now available to employers for such in-depth quantitative evaluation of training/education programs. But the biggest reason that businesses are not devoting the resources and time to make training effective is because training is classified as a cost. In 2013, the United States became one of the first adapters of a new international GDP accounting standard that will treat research and development as a capital investment rather than a cost. In a similar manner another low cost way to encourage more employee education and training is to allow corporations to depreciate their investments in human capital just as they can depreciate (physical) capital investments. Allowing training investment to depreciate over a reasonable time frame would improve quarterly profits by spreading the direct costs of training and even the wage costs of training participants over multiple quarters. Smaller companies could be given tax credits for such investments.

## **Sample Client List**

Over the past four decades, Imperial Consulting Corporation has helped hundreds of organizations, including corporations, professional trade associations, governmental agencies, non-profits, universities, professional education associations, and Chambers of Commerce. Gordon has worked with local, regional, national, and international organizations, including the following:

Accenture	The New North (Wisconsin)
Allstate Insurance	New York University
American Honda Motors	North Carolina Community College System
American Management Association (AMA)	North Carolina Workforce Partnership
American Institute for Research	North Dakota Department of Commerce
American Institute of CPAs	North Dakota Department of Public Instruction
American Society for Training & Development	Northern Trust Bank
Amtrak	Opportunity Inc.
Blue Cross/Blue Shield	Northwestern University
Chicagoland Chamber of Commerce	Penn State University
Chicago Manufacturing Renaissance Council	PricewaterhouseCoopers
Chicago Mercantile Exchange	Province of Nova Scotia, Canada
Chicago Public Schools	Purdue University
Chicago Workforce Board	Railroad Personnel Association
The Conference Board (New York)	Richland Country Development Group (OH)
The Conference Board of Canada	St. Louis Regional Chamber of Commerce
Delaware Department of Labor	South Carolina Department of Education
Federal Reserve Bank of Chicago	Southern Regional Education Board
Fireman's Fund Insurance	SNR Denton
GM/UAW	South Central Michigan Works
Goodwill Industries International	Swiss Business Hub
Greater Seattle Chamber of Commerce	State University of New York
Human Capital Institute	U.S. Chamber of Commerce
IEEE-USA	U.S. Department of Commerce
Illinois Department of Commerce	U.S. Department of Education
IBM	U.S. Department of Labor
Interstate National Insurance	University of Minnesota
J.C. Penney Company	University of Oregon
Kansas Board of Regents	University of Wisconsin
Kentuckiana Works	Valve Manufacturing Association
Lawrence Livermore National Laboratory	Vancouver Board of Trade
Los Angeles Public Schools	Vermilion Advantage
Metra Railroad (Chicago)	Walgreens
Microsoft	Wayne Economic Development Council (OH)
Michigan Manufacturers Association	W.K Kellogg Foundation
Motorola	Workforce Plus (Tallahassee, FL)
National Association of Manufacturers	World Chicago
National Council for Workforce Education	World Future Society

# RETAINS CAN SAVE THE DAY

Millions of jobs go unfilled every day because of a shortage of skilled labor – despite the fact that 30 million Americans are unemployed, underemployed, or stopped looking for work. The job skills gap is expanding and increasingly growing to the crisis point. America won't be able to outsource its needs. Nor will it be able to recruit enough qualified immigrants. As Baby Boomers retire – 10,000 per day for the next two decades – the job market landscape is changing. How can the United States retain its position as a global economic leader with a broken jobs pipeline?

As president of Imperial Consulting Corporation, Edward E. Gordon, has assisted corporations, government agencies, educators and NGOs for the past 40 years. He delivers a viable solution to the skill wars that pose a danger to America's prosperity in his newest book, *Future Jobs: Solving the Employment & Skills Crisis*.

The pillar to his comprehensive approach to this widening and costly problem revolves around the creation of what are known as RETAINS – Regional Talent Innovation Networks.

“RETAINS,” says Gordon, “act as catalysts that bring together different segments of individual local communities to create new talent systems for a 21st-century workforce. To achieve that goal in the near future, we must bring RETAINS to scale across our society.”

What is the concept behind these RETAINS? Why are they being formed? First, to stop population and business flight from a region or state. Second, to reverse tax base decline. Third, to end falling enrollment in community schools, stop declining governmental services, and turnaround local economic stagnation. Community members are uniting to find solutions in a time of regional crisis. They want to retain their life, viability, and spirit to build a better, hopeful future for their community. To do this, they must update their local talent and develop its capacity to innovate.

RETAINS are non-profit public-private partnerships that promote joint business, governmental, educational, and societal efforts to overturn the status quo and rebuild regional education-to-employment systems. In the current talent debate, RETAINS are where private economic/career pursuits merge with public affairs. They help businesses large or small join together in shaping a region's new talent creation system.

No individual business or organization can rebuild a regional workforce by acting alone,” asserts Gordon. “The U.S. business culture has traditionally treated its involvement in schooling as a part-time charitable activity. Now, more and more local/national business leaders are beginning to see that workforce development is not charity, but that the very sustainability of their business and community are dependent upon it. RETAINS help refocus this dialog so that all of a region's partners consider becoming more interdependent. Even the largest corporations now are beginning to realize they cannot solve their talent shortages by themselves, without participating in regional workforce systemic change.”

RETAINS succeed because individual groups form a new shared vision of a larger community arising from a variety of isolate silos. Each group has its own agenda and needs. But each also has an influence on the whole community and each depends on the success of the whole community.

“RETAINS are helping people and businesses better adjust to the lightning speed of current labor market changes,” notes Gordon. “We are in a watershed era of historical transformation driven by major technological advances. The key challenge is rethinking how we create stronger learning skills for more people. During this transition, it is slowly and often painfully becoming apparent that tomorrow' job, career, and life successes will only be earned by those who more fully develop their personal talents.”

# The Workforce in 2020 and Beyond

by Edward Gordon, author of *Future Jobs*

By 2020, the US job market will be sharply and unevenly divided. Seventy-five percent of the available jobs will require higher skills and offer higher pay. About 122 million workers will be needed to fill them. 55 million will be qualified with another 43 million semi-qualified (if further trained) to fill those positions (i.e. 98 million workers in all).

At the same time, only about 25% of the available jobs will need lower skills and offer lower pay. About 41 million workers will be needed. However, 64 million Americans will possess only low skills.

Several continuing educational deficits in 2020 will have a major negative effect on workforce quality:

- 73 million low-literate adults (aged 25-65)
- 1 million high school dropouts annually
- Over 60% of K-12 testing at or below basic skill levels

These four important factors make our current decade a major job-change er:

1. Most of the fastest-growing and good-paying jobs will be in occupations that require some form of post-secondary education/training. This includes apprenticeships and occupational certificates, as well as two/four-year degrees and graduate/professional degrees.
2. The fastest-growing occupations are related to health care, personal care, community, and social sciences. Also, greatly increased demand will exist for jobs at all levels of complexity in the science, technology, engineering and mathematical occupational areas.
3. Low-skill jobs will still account for the greatest number of job openings, but they are not high-paying jobs.
4. A combination of economic and demographic forces will also affect job openings. Due to the exit from employment of the Baby Boomer generation, replacements will generate more job openings than new job creation.

The four sectors of the US economy in which the skills crisis is particularly acute are:

## **1. Health Care**

Help wanted: doctors, nurses, pharmacists, lab technicians, therapists, dentists, and just about anyone who is trained in a broad array of health care occupations to cope with a rapidly aging population.

## **2. IT**

Microsoft, Google, Accenture, AT&T and others all report a need for people in network engineering, tech labs, IT operations, and tech architecture. All of these vacant positions are projected to increase due to future growth and rising retirements.

## **3. Aerospace**

As airlines seek more fuel-efficient planes, they have placed a record number of orders for Boeing's new 787 Dreamliner and the European Airbus 380. Both companies now face significant worker shortages.

#### **4. Manufacturing**

US manufacturing accounts for 12% of US gross domestic product. It employs over 11 million Americans. Manufacturing supports almost another seven million jobs in related industries. Over 60% of US exports come from this sector. Advanced automation has continued to raise productivity from 1987 to 2010, 4% annually. To continue to raise American productivity, both current and newly hired workers must know how to use the latest advanced equipment. This skilled worker deficit is largely due to the fact that manufacturing has become part rocket science.

Falling off the talent cliff will increase the risk of triggering many detrimental socioeconomic changes across America, including:

- 10-20% of small to mid-size businesses may close due to lack of key talent
- Technical and professional services may be rationed for consumers
- Product/service quality may sharply decline as talent shortages increase
- More Americans may be employed by foreign-owned businesses that were formerly American-owned

Employees lament that they are unable to find workers with the requisite skills for vacant jobs. It is becoming increasingly clear that workers need both a better general education and specific career preparation to fill most of these jobs. That has now become the new normal for employment, whether it is an office, production facility, construction site, law firm, or service business.

Shocking talent shortcomings are now apparent across America. We need more than incremental change. Public-private policy alliances can give us something much bolder – beginning today.

## **Statistics, Facts & Projections**

- Unless the education-to-employment system is updated across the United States, a skilled talent shortfall of between 14 to 25 million workers to fill new and replacement jobs is projected in 2020.
- Since mid-2008, six million jobs have vanished, many permanently. More than 30 million Americans are unemployed, underemployed, or have given up looking for a job.
- A 2012 OECD report ranked the United States 22nd among 27 developed countries in the rate of high school completion.
- In June 2013, the U.S. unemployment rate for a high school dropout was 10.7%; for a person with a bachelor's degree or higher, it was 3.9%.
- In 1972 the U.S. high school graduation rate was 83.1%; in 2012, it was 73.4%.
- Between 2010 and 2030, the exodus of nearly 79 million Baby Boomers from the work place will offer many job and career opportunities.
- In January 2013, the unemployment rate for those aged 20-24 was 14.2%. Last year, half of recent college graduates were either jobless or underemployed. That was the fifth straight year that newly minted graduates faced such a tough labor market.
- U.S.-based firms are moving many high-wage jobs overseas, exporting jobs they couldn't fill in the United States. For instance, U.S.-based firms hired one million Canadians in 2011, as well as 1.1 million UK citizens, 615,000 Germans and 529,000 people in France.
- About 4 million Americans between the ages of 55 and 64 lack a full-time job – one in six.
- In 1973, 72% of all jobs were held by either high school graduates or those who didn't graduate. By 2020, only 36% of the jobs will be filled by such people. Further, 16% of all jobs were filled by those with a bachelor's degree or higher, in 1973. By 2020, 35% of the jobs will be filled by them.
- The Association of Medical Colleges expects a rising shortage of U.S. physicians: 60,000 (2015), 91,000 (2020), and 130,000 (2025).
- A June 2013 Society for Human Resource Management employment survey found that over 36% of U.S. manufacturers and 33% of U.S. service business had vacant positions.

## **Testimonials**

“Gordon’s book is a must-read for any serious policymaker and students looking at today’s labor market.”  
–**John E. Silva, Chief Economist, Wells Fargo**

“Skill mismatches create opportunities to raise the skills, employment and earnings of American workers, but only by developing new policies that change the nation’s thinking to attach more importance to occupational and employability skills. Edward Gordon’s distinctive contribution points the way to this new thinking and, more importantly, offers constructive proposals for substantially improving the match between employer demand and worker skills.” –**Robert I. Lerman, Professor of Economics, American University and Institute Fellow, Urban Institute**

“*Future Jobs* lays out a roadmap to the best jobs and careers in America in the coming years. By also explaining the gaps between our educational system’s current outputs and the different skill sets employers are increasingly seeking, Ed Gordon has done a service not just for students, their parents and educators, but most importantly, for the executives now losing the global talent search competition.”  
–**William J. Bowe, Executive Vice President, Encyclopedia Britannica, Inc.**

“Your continued contributions will be absolutely essential to enlarging your community’s future talent pool and keeping the U.S. an economic superpower.” –**Peggy Luce, Vice President, Chicagoland Chamber of Commerce**

“Everybody talks about the growing shortage of skilled workers, but nobody has done anything about it...until now. In *Future Jobs*, Ed Gordon documents the widening gap between the skills required by the 21<sup>st</sup> century workplace and the skills by the graduates of our 20<sup>th</sup> century schools. He also reports on the growing number of successful local initiatives to close the skills gap and accelerate economic growth. An open invitation to local activism! Just add leadership and stir!” –**David Pearce Snyder, Contributing Editor, The Futurist Magazine**

“An amazing book that everyone needs to read!” –**Pat Nellor Wickwire, PhD, President, American Association for Career Education**

“Ed Gordon, an expert on jobs and the people who do them, has zeroed in on a jobs crisis that should keep all of us – employers, educators, especially tomorrow’s workers – awake at night... Our economy and our standard of living depend on solving this problem. In *Future Jobs*, Gordon shows the way.” –  
**Richard C. Longworth, Senior Fellow, Chicago Council on Global Affairs**

“Ed Gordon’s, *Future Jobs* offers a true reform and growth compass to educators, public officials, and business leaders facing skills and jobs mismatches in their communities. He focuses on regional public/private partnerships and presents careful research and pertinent case studies that offer practical guidance for reviving stalled economies.” –**Dale Ward, Executive Director, High School Inc.**

“In *Future Jobs*, Ed Gordon once again explains the true problems, identifies the roadblocks and then offers a blueprint for sustaining our human capital and preserving jobs for the future. Through Ed’s RETAINs (Regional Talent Innovation Networks), we have a chance to once again be a viable region.”  
–**Art Borum, Executive Director, South Central Illinois Growth Alliance**