

Housatonic
Community College

Workforce Summit



FRIDAY
APRIL
21

The Workforce Summit is focused on making stronger connections between industry and education and building a stronger workforce.

The program will engage attendees in group discussions to address the common skills that employers require to operate and grow their businesses, and that individuals need for workplace success.

8:00am - 12:30pm
Beacon Hall Events Center

REGISTER HERE: http://housatonic.edu/workforce_summit



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ACKNOWLEDGEMENTS

The Workforce Summit was a success due to the dedication and effort of a number of professionals in the Southwest Connecticut area and those at Housatonic Community College (HCC). The Steering Committee Members were instrumental in planning and organizing the Summit. They were the sounding voice of the community that clearly articulated the purpose of the Summit and assisted in the recruitment of speakers and participants.

The professional staff at HCC also played an important role in promoting the program and providing support to facilitate the Workforce Summit. President Broadie's leadership in creating the vision that community colleges need to work programs collaboratively with business, manufacturing, health care, and technology is vital to economic sustainability. Megan Cacioppo, Marketing Coordinator, and Richard Hubbard, Webmaster, for the design of the Workforce Summit flyer and registration website. Megan also assisted with organizing the Proceedings as a final and everlasting document of the Summit. Evelyn Melendez, Administrative Assistant, Continuing and Professional Education, was behind the scene and assisted with all of the logistics of the meeting.

I would also like to say "Thank You" to our partner organizations: Bridgeport Regional Business Chamber, the Greater Valley Chamber of Commerce, The WorkPlace, and the Connecticut Department of Labor for promoting the Workforce Summit through newsletters, email blasts, and personal invites. The result was over 100 individuals registered for the Summit. I personally wish to recognize Bill Purcell, President, Greater Valley Chamber of Commerce, for his dedication and commitment to have a successful Summit by recruiting members for the panel discussion and for his service in the breakout sessions.

I hope you find the Proceedings of the Workforce Summit valuable to your work and in developing innovative strategies that were identified.

Sincerely,

John A. Bonaguro, Ph.D.

Associate Dean, Continuing and Professional Education
Housatonic Community College



HOUSATONIC COMMUNITY COLLEGE

Workforce Summit

Friday, April 21, 2017

Event Center, Housatonic Community College

- 8:00 - 8:30 am Coffee, Light Refreshments
- 8:30 – 8:45 am Welcome, President Paul Broadie, Housatonic Community College
- 8:45 - 9:15 am Economic Development in Connecticut and Southwest Connecticut Area
Joe Carbone, President/CEO, The WorkPlace
- 9:15 – 10:00 am Panel Presentation
- George Mitchell, Vice President, Aircraft & Support for Sikorsky’s
Defense
- Melissa Turner, Sr. VP HR for Bridgeport & Greenwich Hospitals, Yale New
Haven System C.C.P. for Talent Acquisition
- Jeff Hubbard, CT/Western MA, Market President, Key Bank
- 10:00 – 10:15 am Break (coffee, tea, water)
- 10:15 - 11:15 am Breakout Group Discussions
- 11:15 – 11:30 am Reconvene in Events Center
- 11:30 - 12:00 pm Reports from Group Discussions
- 12:00 - 12:30 pm Closing Remarks: Connecticut’s Dynamic Labor Market
Commissioner Scott D. Jackson, Connecticut Department of Labor



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Joseph Carbone, President & CEO
The WorkPlace

OUR ECONOMY



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A declining unemployment rate would imply that wages should be rising at a far stronger pace. However, wage growth is nowhere near its pre-recession rates.

Average hourly earnings in March were up about 2.7% from a year ago. But the economy is still a very long way away from producing the kinds of wage trends that would signal a truly healthy market.



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ECONOMIC TRENDS

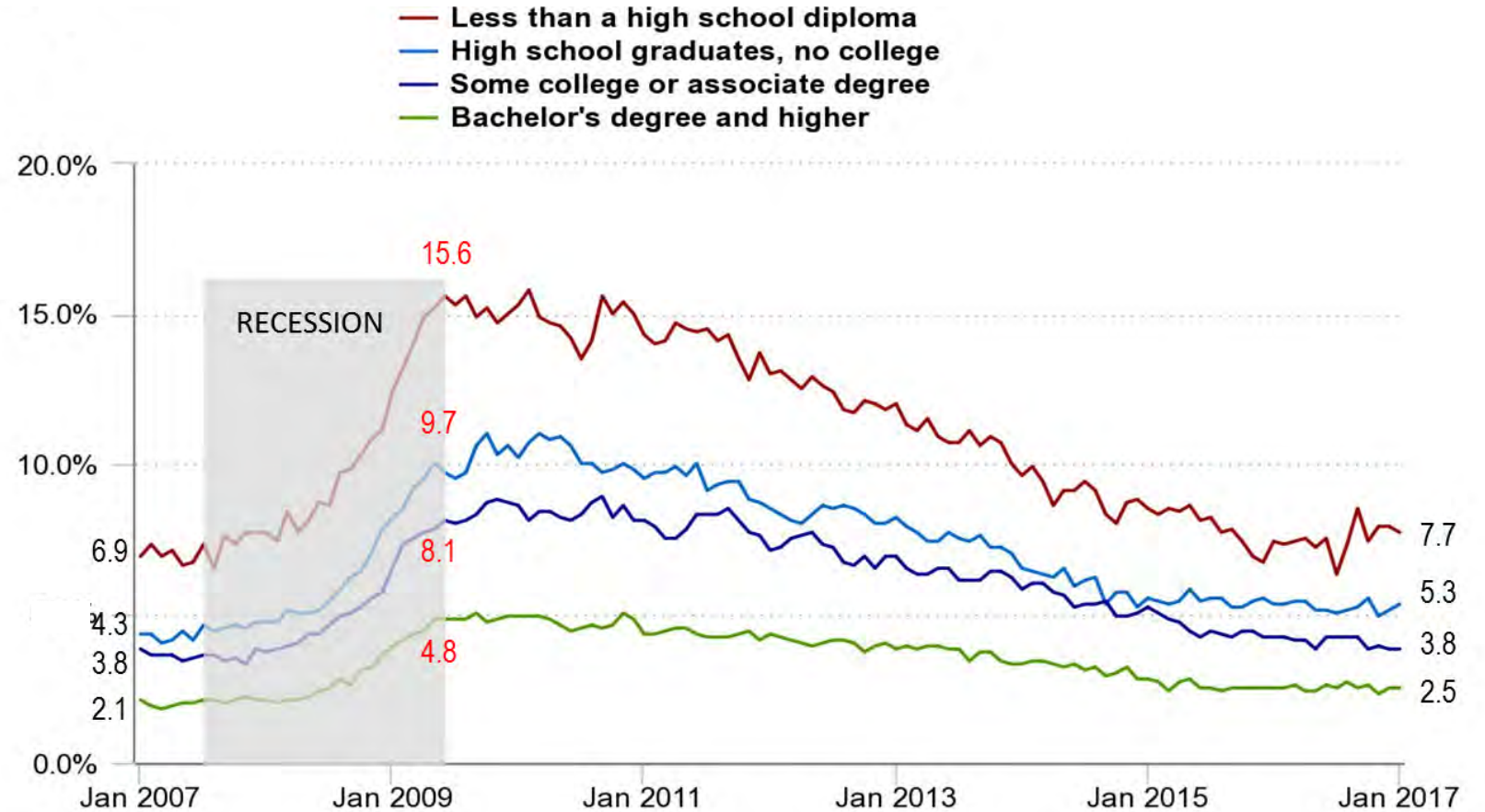
	June 09	Feb 16	Dec 16	Jan 17	Feb 17
Labor Force	410,178	406,310	408,395	408,295	408,900
Employed	377,843	382,079	392,248	386,007	385,989
Unemployed	32,335	24,231	16,147	22,288	22,911
Unemployment Rate	7.9%	6.0%	4.0%	5.5%	5.6%

URBAN AREAS

SUBURBAN AREAS

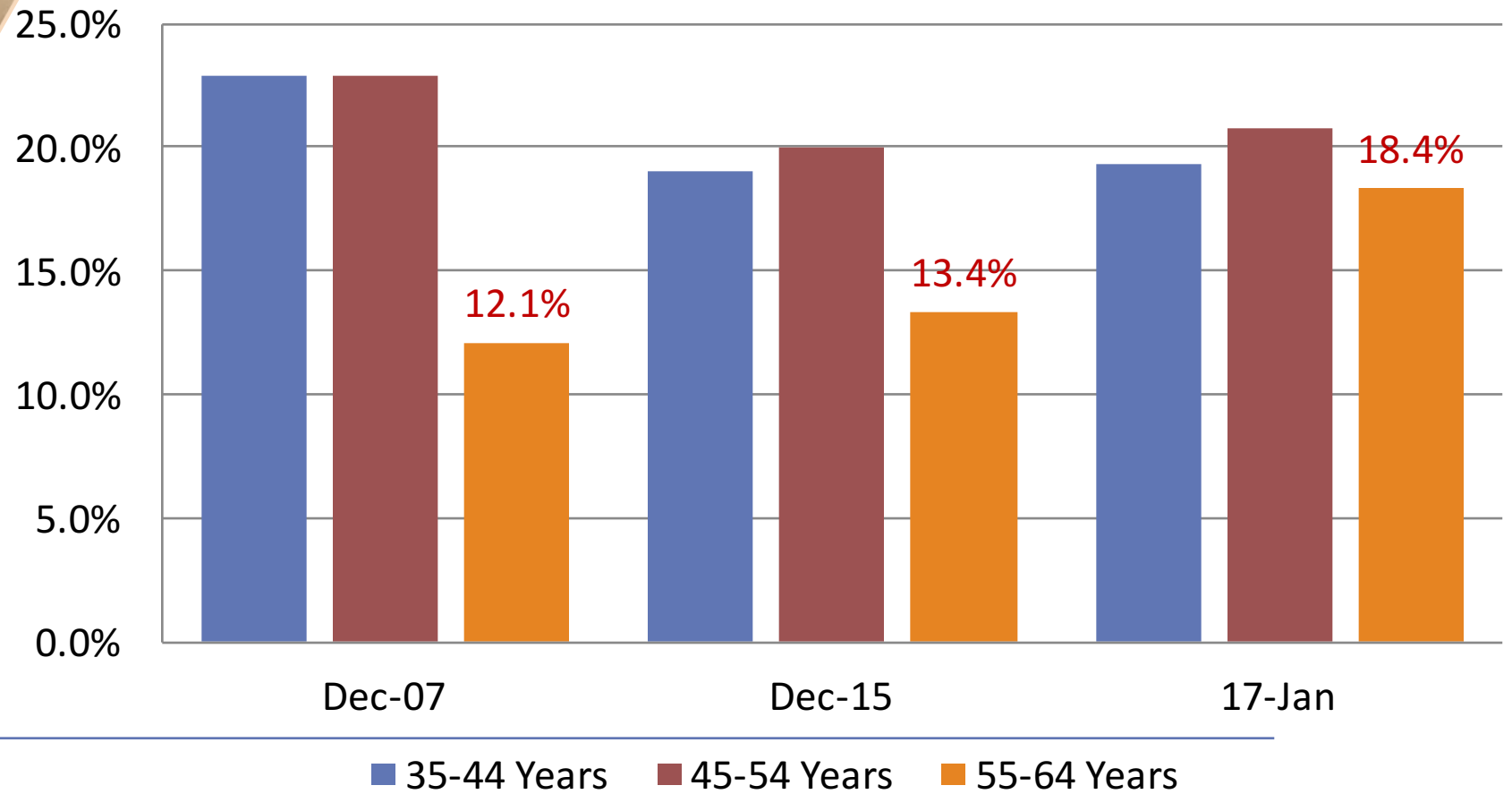
	June 09	Feb 16	Dec 16	Jan 17	Feb 17		Jun 09	Feb 16	Dec 16	Jan 17	Feb 17
Ansonia	9.5%	8.2%	5.4%	7.4%	7.6%	Greenwich	5.4%	4.3%	3.0%	4.1%	4.1%
Stamford	6.8%	5.2%	3.4%	4.7%	4.8%	Westport	5.5%	3.9%	3.0%	4.0%	4.0%
Norwalk	7.3%	5.5%	3.5%	4.9%	5.1%	Wilton	5.3%	4.2%	3.1%	4.1%	4.2%
Bridgeport	11.9%	9.1%	5.9%	8.2%	8.4%	Fairfield	6.2%	4.6%	3.4%	4.5%	4.6%

UNEMPLOYMENT BY EDUCATION



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

PERCENT UNEMPLOYED OVER 52 WEEKS



Source: US DOL BLS

JOBS LOST & RECOVERED

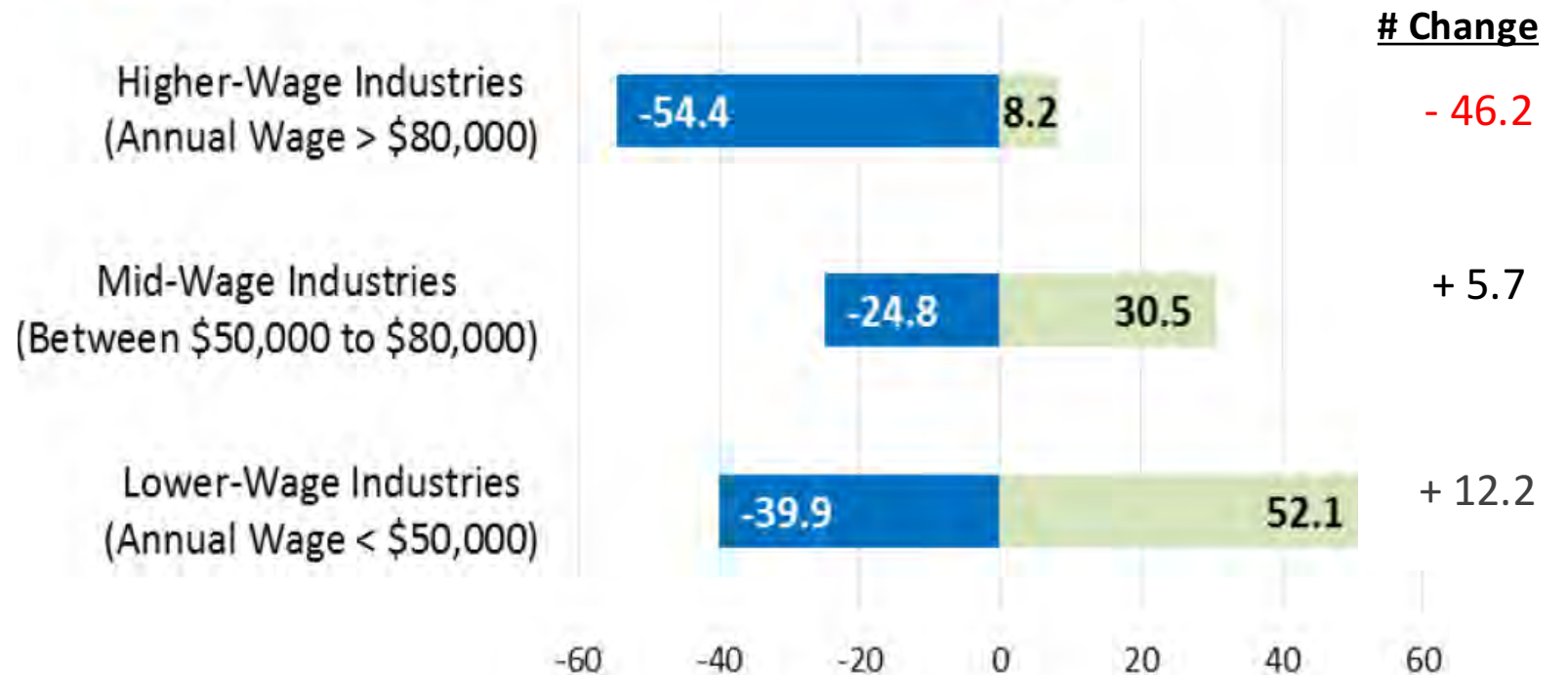


<u>CT Non-Farm Employment</u>	Dec. 07'	Feb. 17'	# Change 07' - 17'	% Change 07' - 17'	Job Multiplier
Retail	190,900	182,600	-8,300	-4.3%	.88
Transportation, Warehousing & Utilities	53,200	53,800	600	1.1%	1.73
Education Services	56,200	64,100	7,900	14.1%	1.68
Health Care & Social Assistance	232,900	266,900	34,000	14.6%	1.68
Government	248,800	233,600	-15,200	-6.1%	1.79
Financial Activities	144,300	130,700	-13,600	-9.4%	3.57
Manufacturing	190,600	155,700	-34,900	-18.3%	3.88
Leisure & Hospitality	135,100	155,200	20,100	14.9%	1.44
Professional & Business Services	210,500	218,300	7,800	3.7%	2.09
Construction	68,100	59,200	-8,900	-13.1%	1.54
Information	37,800	31,300	-6,500	-17.2%	1.11



CT EMPLOYMENT TRENDS IN THOUSANDS

■ Jobs Lost (Mar. 2008 - Feb. 2010) ■ Jobs Gained (Feb. 2010 - Sep. 2016)



Employment growth has been skewed toward lower-wage industries, especially when compared to jobs lost during the recession.

IN-DEMAND SKILLS



1. ACCOUNTANCY & FINANCE

Management Accountants and **Commercial Analysts** are sought given the continuing focus on analysis, process improvement, cost reduction and increasing efficiencies.

2. HEALTHCARE

Organization, Compassion and Communication are needed for **Registered Nurses** which are sought by clinics, not-for-profit organizations and private hospitals.

3. INFORMATION TECHNOLOGY

Cloud computing reduces costs, improves accessibility and increases storage capacity. **Systems Engineers** are highly sought after. Demand for **Business Analysts** will also be high as organizations continue to seek process improvement efficiencies and upgrade systems.

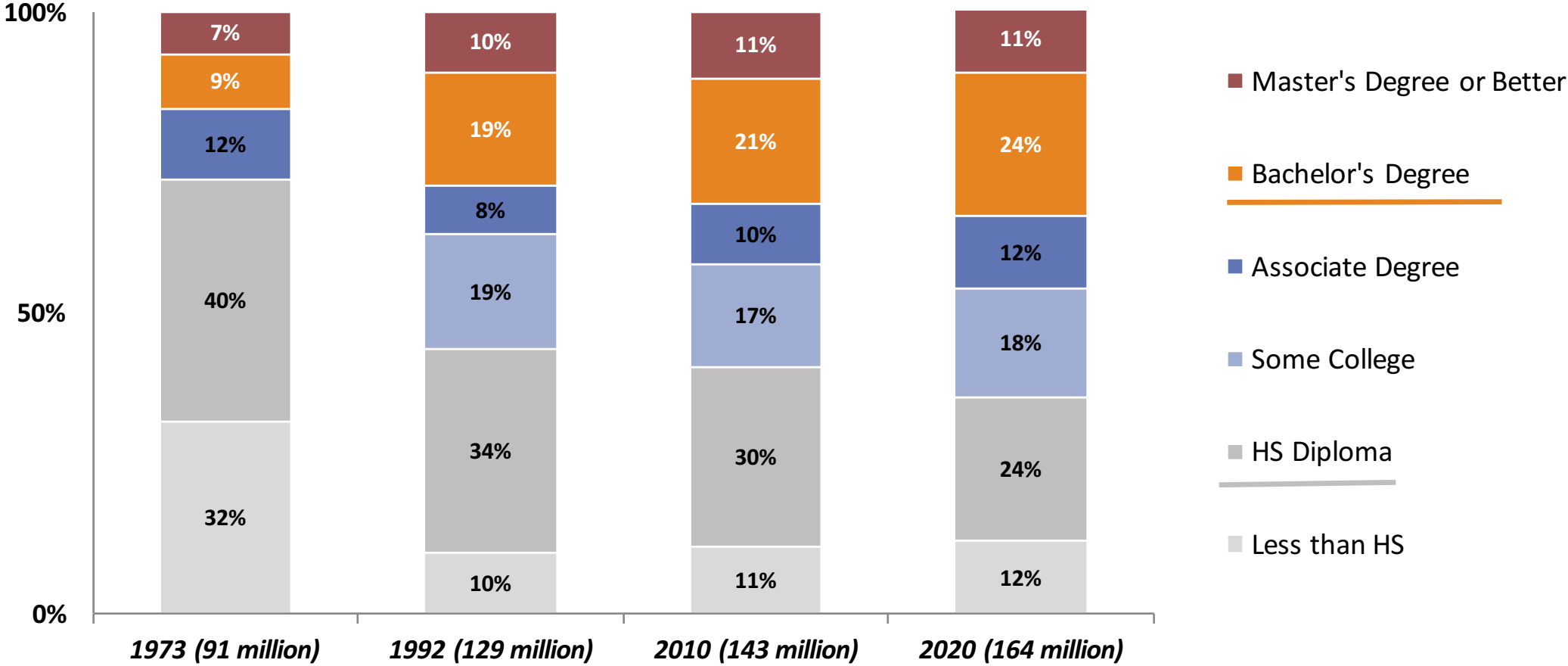
4. MANUFACTURING & OPERATIONS

High level **Production Supervisors** who can be hands-on while also managing the day-to-day functions of teams are sought.

5. POLICY AND STRATEGY

Data Analysts with strong statistical skills are sought to aid policy decisions by providing numerical evidence to management.

LABOR MARKET DEMAND FOR EDUCATED TALENT 1973 - 2020



Year and Number of Working People

Source: Georgetown Center on Education and the Workforce analysis

CHANGING NATURE OF WORK

1 TECHNOLOGY SHIFTS

Technology is helping to redefine employees' workplace expectations. Younger workers are interested in contract or freelance work for more flexible hours, the ability to work from home and project variety, as opposed to a full-time salaried job which may not offer such perks.

Employers agree that the gig economy is affecting the workplace: in a recent study nearly two-thirds said the increase of temporary jobs will impact the workplace in the next 3-5 years.

2 RETAINING TOP EMPLOYEES IS A PRIORITY

Retention is the top priority among employers. With declining unemployment rates and workers tempted to look for jobs in other states, retention programs can offset the high cost of replacing workers.

3 MULTI-GENERATIONAL WORKFORCE

The workforce itself is transforming. There are four generations working side by side. Employees' definitions of family are changing and certain demographics, like single women, are on the rise.

SOURCE: Business Wire April 3, 2017 report on MetLife's 15th Annual U.S. Employee Benefit Trends Study

HOW DO WE ADJUST?



1. PLAY TO OUR STRENGTHS

Healthcare careers will continue to support our aging population. 14% job growth since 2007. Find ways to retain young graduates and promote life-long learning to strengthen the workforce.

2. LIFE LONG LEARNING

Our workforce will be judged by what they can do to help employers. Without new skills, abilities and expertise, workers will be relegated to a low-wage future.

3. EXPAND OUR “SERVE THE WHOLE PERSON” APPROACH

Develop more solutions than training to break down barriers to employment. Leverage the benefits of peer to peer, cohort based programs that address the needs of mind, body and spirit.

4. FOCUS ON IMPROVEMENT OF SERVICE DELIVERY

Our efforts can not be about self-maintenance but must be about creating measurable improvements in the workforce. We need to invest in becoming better at what we do to meet the needs of our customers.



THANK YOU



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The **WorkPlace**

»» *Think it forward.*



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WORKFORCE SUMMIT BREAKOUT GROUP DISCUSSIONS

1. What are the major workforce challenges facing the Southwest Connecticut region?

2. What are examples of initiatives or solutions that are working successfully to resolve workforce challenges in the Southwest Connecticut region?

3. What strategies can be pursued to address workforce challenges? Of the strategies identified, which makes the greatest difference in resolving the workforce challenges?
 - A. How do we refocus education programs and offerings to align job seeker skills and capabilities with the needs of employers in the Southwest Connecticut region? (Strategy Description)

 - B. Identify new ways to access needed skills and competencies, especially for hard-to-fill jobs. (Strategy Description)

 - C. How can we retain talented workers who currently leave Southwest Connecticut to seek opportunities elsewhere and support those who stay in the area to achieve their full potential? (Strategy Description)

WORKFORCE SUMMIT AT HOUSATONIC COMMUNITY COLLEGE

APRIL 21, 2017

EXECUTIVE SUMMARY

The Housatonic Community College Workforce Summit hosted a half-day event on April 21, 2017. The proceedings and findings from breakout sessions are presented in this document. The Summit was an opportunity for the community to identify workforce challenges and how education and training can help address them. The objectives of the Workforce Summit were to:

- Describe the major workforce challenges facing the Southwest Connecticut area.
- Discussing sector-specific initiatives or solutions that are working to resolve workforce challenges in the Southwest Connecticut area.
- Identify strategies in each of the following sectors (manufacturing, healthcare, education, information technology, business, and green technology) to pursue in addressing these challenges. Of the strategies identified, prioritize the strategies in resolving the workforce challenges for the Southwest Connecticut area.

The session of the Summit was a presentation by Mr. Joseph Carbone, President and CEO, The WorkPlace. His presentation described economic trends and unemployment by educational level. This was followed by a panel presentation with representatives from aerospace, business/banking, and health care. The audience received two articles to read during the Summit that focus on the skill gaps in employment. The articles were:

“The Idea that Launched a Thousand Strategic Plans” by Dan Berrett, *The Chronicle of Higher Education*, January 22, 2017

“Wanted: Factory Workers, Degree Required” by Jeffery Selingo, *NY Times*, January 30, 2017

Breakout group discussions followed that covered the key questions of:

1. What are the major workforce challenges facing the Southwest Connecticut region?
2. What are examples of initiatives or solutions that are working successfully to resolve workforce challenges in the Southwest Connecticut region?
3. What strategies can each of the following sectors (manufacturing, healthcare, education, information technology, business, and green technology) pursue to address these challenges?

After reports from the breakouts sessions were presented, Commission Scott Jackson, Connecticut Department of Labor, provided closing remarks about how education, employers, and government need to work together to create and sustain a healthy work environment.

After the conference, the responses from the breakout sessions were compiled and reviewed. Five major themes were identified:

1. Match workers and skill sets to best address the workforce needs in Southwestern Connecticut.
2. Partner with employers to provide skilled workforce with support from the educational system, Connecticut Department of Labor, and the legislature.
3. Concentrate on career readiness: Develop communication channels on career potentials and identify what competencies are needed.
4. Focus on the educational system to develop programs that meet workforce skills and competencies for Connecticut's economy and growth.
5. Develop a system to meet workforce needs through collaboration and partnerships from all sectors of the economy.

It is recommended that Housatonic Community College to host annually a Workforce Summit to address workforce needs in Southwestern Connecticut. Future topics to consider are: Apprenticeship Programs, Resources at the Department of Labor, Retirement Cliff and Its Impact on Workforce, and Future of Information and Green Technology.

QUESTION ONE: WHAT ARE THE MAJOR WORKFORCE CHALLENGES FACING THE SOUTHWEST CONNECTICUT REGION?

1. Individuals seeking employment need training in interview preparation and other areas of business communication.
2. Educational institutions and business should work together to focus their efforts in meeting the challenges facing Southwest Connecticut. This should also include school guidance counselors and career counselors.
3. Flexibility in education and training to meet the challenge.
4. Contracting population coupled with available labor force not trained adequately to match job current openings. Improving work preparedness for current and future labor pools, changing perceptions of viable career options, and reaching out to guidance counselors/parents to better educate them on the changing economy and available career options.

QUESTION 2: WHAT ARE EXAMPLES OF INITIATIVES OR SOLUTIONS THAT ARE WORKING SUCCESSFULLY TO RESOLVE WORKFORCE CHALLENGES IN THE SOUTHWEST CONNECTICUT REGION?

1. Creating career readiness pathways.
2. Need for stackable credentials in the educational system.
3. Collaboration with business and non-profit groups for education and training.
4. AMC and partnership with funding sources to help employers both with hiring the graduates for new positions; and skills development for incumbent workers. On-going collaborations and committees working together to identify and address challenges.

QUESTION 3: WHAT STRATEGIES CAN BE PURSUED? WHICH MAKES THE GREATEST DIFFERENCE IN RESOLVING THE WORKFORCE CHALLENGES?

1. Grow pipelines into other professions
2. Programs must be fluid and responsive. Partner with colleges to build the curriculum.
3. Create leadership development and professional development programs.
4. Continue to strengthen collaboration between employers facing workforce skill gaps and agencies able to provide viable solutions to address those needs both long-term and short-term (Education & Labor). Encourage and nurture an environment of life-long learning and career paths – identify transferable skills across multiple industries to share the burden and maximize resources and efforts.

FEEDBACK FROM BREAKOUT GROUPS AT WORKFORCE SUMMIT

QUESTION ONE: WHAT ARE THE MAJOR WORKFORCE CHALLENGES FACING THE SOUTHWEST CONNECTICUT REGION?

Finding Skilled and Experienced Talent

Not getting enough applicants

Budget and salary competition

Field service technicians needed

Skilled machinists needed

Need skilled people who can assemble equipment

Lack of manual unskilled labor

Lack of engineering talent

Variety of technical positions needed

IT staffing acquisitions

Cyber security and big data- greater needs in banking 5-6 years of experience

- Analytics
- Data visualization and management
 - Statistics
 - Systems analysis

Need experienced nurses (home health care)

Need behavioral health professionals, psychiatrists, etc.

H16 Visa gap potential – challenge strategy

Meeting the Skills Gap: Training

Many long-term, highly skilled employees who are close to retirement-no one to replace them

Difficult to train and retrain long term employees

Limited time for mentorship

Encourage companies to set up training programs for junior employees

Applicants need to know how to focus on or approach job search

Expectation gap: Lack of learning “agility” (adaptability)

Need to repurpose people

Lack of multi-skill training (e.g., mechatronics)

Automation

Work on soft skills– the mental health component

Provide on-line training opportunities as well as continuing education

More hands on training so people understand real world application

Pre-apprenticeship programs

- State matching funds of manufacturing training
- Platform to employment program
- CT apprenticeship training
- Mandatory field work programs

Training for temp agencies on workforce needs

Training for nursing in home and long term health care

Certified nursing assistant training

Lack of workforce level English as Second Language (ESL) training at the workplace

Difficulties with job shadowing in healthcare, only allowable if individuals are possible job candidate. There are issues with HIPAA and job shadowing

Incentive programs for apprenticeships, but it is hard to find candidates

Training for temp agencies

Meeting the Skills Gap: Education

Need to develop new educational models

Colleges and businesses need to work together to focus efforts

Schools need to cultivate relationships with business community, chambers, etc.

We need to create shorter and better pathways to careers

Work with school guidance counselors

- Foster a change in perception of manufacturing jobs
- Match today's reality – high pay, high skill, high tech

Work with career counselors to help meet the needs of different students by encouraging certified programs, associate degrees, four- year college degrees

Companies, education, people need to get comfortable with change

Schools need to cultivate relationships with business community, chambers, etc.

Partner with education for “lifelong learning”

Students need training in interview preparation and other areas of business communication

- Writing skills (i.e., memos, resumes, job application process)
- Interviewing skills and process
- Be able to work in teams
- Professional presentation
- How to hire – what they look at – phone screen
- Key words - for resume, for job descriptions
- Millennial - do research on company
- Social skills -how to network and interact with others in a professional setting

- Develop work ethic

Community Barriers

Inconsistency of public transportation

- Limited bus routes in remote locations, gap in routes
- Cost for trains, bus, etc. (some companies help with shuttle)
- Might limit hiring based on where candidate lives
- Parking availability
- Transportation – (Intermodal)
- Can't get to certain locations-too expensive (Ansonia, Monroe, even Norwalk)

Cost of Living

Lower state taxes

Promote CT lifestyle, events, and nightlife

Perceptions of manufacturing

Requires intelligence, but not perceived that way

Stigmatized as lower level jobs (not just that, but its seen as menial work that many people don't want to do)

Lack of shop class in schools

"Low paying", but students don't understand salary ranges (e. g., McDonalds versus manufacturing)

Education/training needs to be fluid, responsive, ability to "break rules" and be lead by industry

Can't take 18 months for program to change, can't accept union work rules and bumping of less than top notch talent teaching our future employees

Employment Barriers

Unions root cause of the problem by resisting change, protecting those who are not the best, and losing talent due to bumping

Leadership is needed: Too much turf and infighting at state level in the past

Flexibility – owners, educators – old rules and rules in several (sic) don't work anymore – understand the millennials

QUESTION 2: WHAT ARE EXAMPLES OF INITIATIVES OR SOLUTIONS THAT ARE WORKING SUCCESSFULLY TO RESOLVE WORKFORCE CHALLENGES IN THE SOUTHWEST CONNECTICUT REGION?

Finding Skilled and Experienced Talent

Graduates from Advanced Manufacturing programs around the state

Thrive-networking organizations that connect employers with workers

Creating career readiness pathways

Career path collaborations with companies that provide tuition reimbursement

Manufacturing: Emmett O'Brien High School, Housatonic Community College, and Platt Technical High School

Bullard Haven High School another resource (for every \$1 spent get \$0.50 back)

The workplace "Career Readiness"

State locking up Sikorsky until 2032

T/TAC (Training and Technical Assistance Center) leads to greater connections with industry and industry advisory group

Meeting the Skills Gap: Training

Platform to employment at The WorkPlace is a model program

Partnerships with HCC and Platt High School for incumbent worker training (Copy + expand what works – i.e. Platt Tech's program, Asnutuck CC, HCC)

Need stackable credentials (e.g., CNA, EKG, phlebotomy, patient care technician or CompTIA A+, Network, and Security)

Leverage infrastructure with Connecticut Department of Labor, community colleges, high schools, and employers

Training programs need up-to-date equipment to prevent employers investing in worksite training

Microboard Processing Inc., apprentice program's low turnover rate

Medtronic Davincia Robotics

Meeting the Skills Gap: Education

Educational program need up-to-date equipment (e.g., CNC machining)

Non-profit support for education and training (community trusts)

Commitment of resources, time to employees of small to mid size companies

QUESTION 3: WHAT STRATEGIES CAN BE PURSUED? WHICH MAKES THE GREATEST DIFFERENCE IN RESOLVING THE WORKFORCE CHALLENGES?

Career Readiness

- Identify career readiness competencies
- Need to address areas that prepare workers for careers:
- Appearance – colored hair, earrings, "Know your audience"
- Dress code
- Teach business etiquette
- Teach a course or two on business writing skills (i.e., emails, memos, use of text messaging, etc.)
- Customer service-teach basic communication skills

- Study the difference between managers and workers
- Timing – can't get to class (or work) on time –there are consequence
- Risk management-contact employer and ask what is needed...what is needed on resume

Invite parents to career fairs and explain importance of these events

Hard to get parent buy in, still want their student to go to college

Younger intervention for STEM

Employer training for NIMS (MFG. certification)

Pre-Apprentice option

- Not as stringent requirements
- May not have to offer benefits
- No obligation to hire
- Subsidize senior person to train

Meeting the Skills Gap: Training

Retired machinists

- Need pool of talent they would be willing to train
- Could state organize list?

Union pathways

Grants for apprentice programs

Highly skilled people are burnt out and don't have time to train resulting in employer paying overtime and losing profits

HCC Graduates will be stronger in their field but need more patience to build skills

- Ex: 4-5 years for machinists
- Companies hope that retention occurs, so candidates have chance to be real machinist

Blend of training options

- Weekends/nights
- Online
- Industry grouping/incumbent workers
- Age grouping
- Flexibility of schedule

Inspectors/mechatronics

- 8-year holes
- Need flexibility to inspect different products, not just 1

Expand Apprentice programs

Strategy Example: Hartford insurance

- Give company \$3500 for tuition

- Grow pipelines into other professions (ex: paralegal HF leisure + hospitals)
- Classroom + online job training for one year
- New people or retraining
- State/employer collaboration
- Ctaprenticeship.com
- CC partnerships – pipeline
- Family business restrictions

Strategy Example: Examine German apprenticeship programs

- 3 years 11-12 grades start

Rotation between departments

- Push apprenticeships into t15

Strategy Example: CT Hires – labor exchange

- Creates pool of employees to match with employers
- Manufacturing job agency
- Good sources with Indeed for machinists

Meeting the Skills Gap: Education

Celebrate successes and share with younger students

Shop class in middle school

Intern vs. apprentice program (Paid vs. nonpaid)

College graduates target, but need flexible training

Summer programs for younger students that could be housed at CC over summer

Teacher shortage – don't need master's degree to be a tech teacher mentoring (use alternative credential to meet accreditation standards in high education).

In Healthcare, need IT, Telemedicine, monitoring at home (lagging behind)

Healthcare informatics

Software basis

Business models -greater epic at their training facility (Wisconsin)

Credentialed trainer

Radiology in epic – analyst, other positions

Cross train in informatics and clinical field (HER)

Robotics Training

- Lord Chamberlin & ST. V's for health sciences at high schools-Full year lab for A+P
- Shelton H.S. – Career pathways
- East Haven – Health sciences

Open pathways for high schools partnerships to offer for new hires

- Central H.S. = CNAs program
- Collaborate – H.S. & colleges i.e., St. V's & Bassick and CAN collaboration
- EHR -> communications -> Diff. types of facilities

Break the rules

Don't have 18 months to adapt/change programs

Push unions for flexibility – bumping is a problem

Programs must be fluid + responsive

Attract top-notch talent – legislation to change requirements

Continuing education for employees and for educators

Closing the Skill Gap: Recruitment and Retention of Talent

Strategy Example: Create a statewide Talent Management Office

- Focus groups
- Surveys
- Recognitions
- Benefits
- Tuition

Strategies: Hard to Fill Jobs

Step up program defrays cost/risk

Use money to pay new hires more

More hands on – all way up through engineering degrees

Faster promotion path vs. old slow, same path for everyone

Apprenticeship offer On-the-Job Training (OJT), classes + mentoring

Partner with community colleges to build the curriculum

Work at developing core skills, even getting Department of Labor grants to do this

Develop a relationship with vocational high schools

Share teaching talent

Scholarships to support additional education

Work with workforce boards

Look to not for profits to develop workforce partnerships (e.g., United Way, Good Will, Salvation Army)

BIP – Bridgeport Innovation Program

Look at ways to collaborate with the City of Bridgeport

Flexible scheduling/TH sharing

Promote CT lifestyle, events, and nightlife

Facilitators/Trainers contractors on-site, so skilled workflow not interrupted

Marketing & promoting suppliers vs. bigger employers

Tuition reimbursement

- Give scholarships
- Tuition remission

Recognize and award employees

- Sign on bonus
- Allocate and for longevity bonus – incentivize
- Employer referral – bonus
- Always look to develop everyone to his or her full potential
- Identify job satisfiers
- Create career paths

Worker Retention

- Competitive Salaries
- Networking Groups
- Employee Recognition
- Company Brand/Corporate Culture

Relationship between Company and College

Online courses

More availability of advanced coursework

Incumbent worker training program flexibility

Examine wage and benefits structure

Leadership development and professional development programs

EVALUATION FORM

Please read each statement and check mark your rating from Strongly Agree (1), Agree (2), Disagree (3), and Strongly Disagree (4)

Program	Average	STDEV	N
Overall Workforce Summit	1.38	.50	34
Presentation by Mr. Joe Carbone	1.30	.46	33
Panel Presentation: Industry Needs	1.50	.67	32
Breakout Sessions	1.38	.61	34
Closing Remarks: Commissioner Jackson	1.30	.47	33

WHAT WAS THE MOST IMPORTANT PART OF THE WORKFORCE SUMMIT?

All was very informative. Breakout sessions were excellent

Break out session

Networking, finding resources

Breakout sessions

Breakout sessions were very informative

the panel was so informative

Group discussions ✓+

Collaboration of ideas

Breakout sessions specific to each discipline and opportunity for discussion for networking

Engaging education and employers

Listen and check off that other employers are in a similar set of issues

Joe Carbone's Data

The most important part was the information shared by Joe Carbone

Small group discussions

Learning about HCC manufacturing program. Connecting with employers

Learn more about resources available. Advanced manufacturing DOL, etc.

Roundtable

Panel Presentations

#1 Breakfast Sessions #2all presentations

Networking, getting to meet some people who I had spoken with on the phone or email in person

Panel + Breakout

Sharing of info @ breakout sessions

Networking and meeting industry leaders

Breakout sessions

Breakout sessions

That HCC & attendees are looking for answers & changes

Breakout sessions

All of it

Getting people together to talk

Bringing local leaders together

All of it was informative

HOW COULD THE CONTENT AND FORMAT OF THE SUMMIT BE IMPROVED?

Include tours of Housatonic Community College (e.g., Advanced Manufacturing Program)

Share breakout session outcomes with attendees

No recommendations

Microphone for questions

Continue industry speakers

Prior material sent out

We could have quarterly Summits

focus more on the strategies that we can put into place

Leave a little time for breakout session leaders to compile info

More employer input

Nice flow, moved along quickly. Keep similar format

I think it was great. Perhaps not having quite as many groups since the reporting got a little long

Little more focus for breakout session

one additional small group activity

Take all of the key overlapping key points and Strategies on how to implement them.

It was very well presented

More varied fields for work groups

Panel wasn't too helpful

Unable to hear questions from audience - traveling mic would be good

More attendance - more business participation

The breakout sessions need to have more people from the industries indicated. There was only one IT firm in the technology breakout.

WOULD YOU RECOMMEND A SPEAKER OR TOPIC FOR A FUTURE WORKFORCE SUMMIT?

Dave Kelly - NPI very knowledgeable/great resource

Retirement cliffs (aging workforce)

The Mayor of the region

Commissioner Jackson as a keynote

Maybe the option to obtain a little more detail about some of the Department of Labor services

Bring back Mr. Jackson with a progress report.

Report back progress made from suggestions from previous Summits

New technology firms in the CT area

Past apprentices

Stories of overcoming competitive challenging in workforce development

Yes - discuss positivity of CT - Bill Purcell of Valley Chamber. Too much "CT Bashing" not enough encouragement

LIST OF PARTICIPANTS

Alexander Dacey	Amodex Products
Alissa Hamilton	Bausch + Stroebel Machine Company
Anisha Thomas	Housatonic Community College
Anna Champagne	Subway World Headquarters
Arian Pagán	Housatonic Community College
Bernard Krieger	Cober, Inc.
Betty Ann Griffin	St. Vincent's College
Beverlee Dacey	Amodex Products Inc
Bob Allard	CONNSTEP Inc.
Bob Allard	CONNSTEP
Chris Aronson	EDR
Christopher Clouet	Shelton Public Schools
Cynthia Lyon	The Business Council of Fairfield County
Dave Kelly	NPI/Medical
David Marsh	People's United Bank
David Tuttle	Platt Technical High School
Dawn Hatchette	Life Bridge Community Services
Debbie Anderson	Emmett O'Brien
Debra Perazzella	Disanto Technology
Diane Christiano	Stratford Public Schools
Diane Monagan	Northeast Laser
Dr. Paul Maloney	Fairfield University
Erika Trimarchi	PTA Plastics
Eryn Bingle	Congressman Jim Himes
Glenn C. McCue	The Beta Shim Company
Griffin Burrows	Fairfield
Guest	Gateway Community College
Guest	CT. Department of Labor
Guest	WCHN
Guest Lindy Lee Gold	State of CT Department of Economic and Community Development
Jacqueline Godbout	NPI/Medical
Janice Corvino	Subway World Headquarters
Jerry Clupper	New Haven Manufacturing Association
Jerry Russo	Prime Resources Corp
Jim Heun	Butler Aerospace & Defense
Jo Bennett	Gartner
Joe Carbone	The WorkPlace
John Boanno	EDR
John Bonaguro	HCC

John Namnoum	Circuit Breaker Sales NE Inc
Joseph A. Duhaime Sr	Housatonic Community College
Joseph Jenecaro	Housatonic Community College
Karen DelVecchio	Bridgeport Regional Business Council
Kate Donahue	Hampford Research, Inc.
Kathy Saint	Schwerdtle Technologies
Kelley Johnson	Doors to Explore Inc.
Kenneth Saranich	Shelton Public Schools
Kimberly Wood	Housatonic Community College
Kris Lorch	Alloy Engineering
Kurt Westby	CT Dept. of Labor
lauren DEBENEDICTIS	PRESTIGE INDUSTRIAL FINISHING CO.
Laurie LeBouthillier	Emmett O'Brien THS
Lesley Mara	CSCU
Lori De Leo	ASML
Lori Sanchez	Valley Regional Adult Education
Lori-lynn Chatlos	Connecticut Department of Labor
Ludwig Spinelli	Optimus Health Care, Inc.
Marcy Minnick	Excello Tool
Maribel Morgan	CONNSTEP
Maricel Pathammavong	CT Department of Labor Office of Apprenticeship Training
Marilyn Caraballo	Prime Resources Corp
Mark A. Stankiewicz	Connecticut Department of Labor
Mary Beth Nelsen	The Right Resource
Mary Ellen Cody	Gateway Community College
Matt Gasper	Monroe Staffing
Meredith C Ferraro	Southwestern AHEC, Inc.
Merilee Roussat	Gateway Community College
Michael Proto	Prestige Industrial Finishing
Mickey Herbert	Bridgeport Regional Business Council
Mike Iassogna	Tier ONE Machining & Assembly
Monika Gibek	ASML
Nicole Russo	MPI
Pamela Pirog	HOusatonic Community College
Paul Zepp	Farrel Corporation
Paula F. Chapla	HCC
Phil Dante	HCC
Richard DuPont	HCC
Robert Colapietro	CONNSTEP, Inc.
RSEProName	Organization
Scott Zito	Platt Tech/ CTHSS
Stan Montefusco	Tier ONE, LLC
Stephanie De Ment	Electri-Cable Assemblies
Suzanne Cincotta	Goodwill Western & Northern CT
Tom Barrett	Disanto Technology



Tony Troiano	Tier ONE, LLC
Tracy Ariel	CSCU
Vicki Bozzuto	Gateway Community College
Victor Fuda	CT Department of Labor
William Witecki	ProFlow inc

BIOGRAPHIES OF SPEAKERS

Joseph M. Carbone, President and Chief Executive Officer, The WorkPlace

Joe Carbone has been President and Chief Executive Officer of The WorkPlace since 1996. During Joe's tenure, The WorkPlace has evolved into a nationally recognized leader in creating innovative workforce programs. The WorkPlace's entrepreneurial approach to workforce development has expanded the agency's capacity to assist underserved populations, including workers with disabilities, at risk youth and veterans. In response to the devastating impacts of the recession, The WorkPlace launched Platform to Employment to assist the long-term unemployed return to work. The program's success has been covered by national media, including "60 Minutes" and replicated in more than a dozen states across the country.

Joe has branded The WorkPlace as a competitive business rather than a traditional nonprofit. The WorkPlace's aggressive pursuit of fee-for-service ventures and competitive grants from both government and private foundations enables the organization to provide life-changing assistance to thousands of people each year in Connecticut. The regional business community has recognized Joe with the Walter H. Wheeler, Jr. Leadership Award, named after the visionary Pitney Bowes leader, for Joe's distinction as a non-profit executive and commitment to ensure that all individuals can make a contribution in the workforce.

Recently, Joe was appointed by the Federal Reserve Bank of New York to serve on their Community Advisory Group, composed of leaders of nonprofit and community organizations from throughout the Federal Reserve's Second District. Members will provide the New York Fed a real-time view of the issues faced by the diverse communities across the region.

Joe is a seasoned administrator with private sector experience, having managed government relations for Textron and the Allied Signal Corporations. As a leader, Joe's style emphasizes entrepreneurship, inclusion, cooperation, and accountability.

Jeff L. Hubbard, Market President, Commercial Sales Leader, Connecticut and Western Massachusetts Market, KeyBank

Jeff L. Hubbard serves as President and Commercial Sales Leader for KeyBank's Connecticut and Western Massachusetts market. In this role, he leads the bank's regional economic and community development efforts, and oversees the sales effort for delivering a full range of lending and financial services offered to commercial clients. He is also accountable for driving collaboration and coordination of activities and resources to generate revenue growth and increase market share, and serves as the external face and voice of KeyBank in the Connecticut and Western Massachusetts communities. Jeff is also the President of the Key Serving Company.

Prior to the acquisition of First Niagara Bank by KeyBank in 2016, Hubbard served as New England Regional President for First Niagara. He joined First Niagara in 2015 from TD Bank, N.A., where he served for six years, most recently as Regional Vice President, Commercial Banking responsible for managing the daily business activities for

the bank in the Hartford region of Connecticut, as well as expanded responsibility for leading the bank's commercial, middle market and small business lending activities statewide.

Prior to TD Bank, Hubbard served as Senior Risk Officer for Bank of America with responsibility for evaluating credit approvals in collaboration with market objectives. From 2002 to 2009, he was Senior Vice President and Manager for Webster Bank, with responsibilities in Connecticut, Massachusetts, New York and Rhode Island. In addition to leading a team of more than a dozen bankers, during his seven-year tenure he oversaw the launch of four major initiatives for the bank. From 1993 to 2002, Hubbard was based in New Haven, CT serving in senior management positions with Fleet Bank and Merrill Lynch.

Hubbard earned his Bachelor of Science degree in Business Administration from Plymouth State University in Plymouth New Hampshire, a Mastery Certificate from the University of Connecticut Business School and is graduating from the Stonier Graduate School of Banking at Wharton University in June of this year. He's an active member of the community, serving on the Executive boards of the Connecticut Business & Industry Council and the Connecticut Bankers Association. Jeff has board roles on United Way of Central and Northeastern Connecticut, Greater New Haven United Way, Greater Hartford YMCA, CAPA/Shubert New Haven, and HEDCO Inc. and Market New Haven. He is a former board member of the Community Investment Corporation, Connecticut.

Scott D. Jackson, Commissioner, Connecticut Department of Labor

Scott D. Jackson was appointed Commissioner of the Connecticut Department of Labor in February 2016. A graduate of Cornell University, from which he holds a Bachelor's degree in Government, Commissioner Jackson served as secretary of the Cornell Civil Liberties Union and was on the editorial staff of the Cornell *Political Forum*. While at Cornell he was awarded a Mellon Foundation Fellowship to study demographic trends in municipal government at Yale University, and received one of two Minority Student Achievement Awards from the Cornell University College of Arts and Sciences.

From 1993 to 2000, Commissioner Jackson was a member of U.S. Senator Joseph Lieberman's staff in Hartford, where he handled citizen outreach and casework duties and served as Systems Administrator. He left Senator Lieberman's office in 2000 to serve as Project Manager and Technical Director for the Connecticut Policy and Economic Council, an entrepreneurial non-profit dedicated to improving the delivery of government services.

In 2003, Scott returned to Senator Lieberman's office as Deputy State Director for Constituent Services. He also became a member of the Town of Hamden's Community Development Advisory Commission. A year later, he was appointed to manage the town's Office of Housing and Neighborhood Development, which was charged with overseeing the Community Development Block Grant. In 2005, he was appointed Chief Administrative Officer for the Town of Hamden. He was elected Mayor of Hamden in 2009, leaving the office in 2015 to become Connecticut's Undersecretary for Intergovernmental Policy.

In 2014, Commissioner Jackson was appointed by Governor Dannel P. Malloy to serve on – and was chairman of – the Governor's Sandy Hook Advisory Commission. As chair, he utilized his service on statewide boards and commissions to guide the 16-member panel as it investigated the 2013 tragedy at Sandy Hook Elementary School.

George Mitchell, Vice President, Operations Product Centers, Sikorsky, a Lockheed Martin Company

George Mitchell is Vice President, Operations Product Centers for Sikorsky, a Lockheed Martin Corporation. In this capacity, he is responsible for leading the business and manufacturing operations for Aerostructures, Avionics, Blades, Dynamic Components, and the Sikorsky Maintenance, Repair & Overhaul units.

The Product Centers manufacture the components and assemblies used to build helicopters for our customers in Assembly and Flight Operations, and to service aftermarket customers. George's additional responsibilities include the Sales, Inventory & Operations Planning process, Enterprise Asset Management, Material Logistics, and subcontractor management. The Product Centers have 2,700 employees located in seven domestic and international locations.

Previously, George was Vice President of Aircraft and Support, responsible for all aspects of field service operations and platform management across the enterprise. He was also the Vice President of our SAS Military Customer Support group in which he and his team were accountable for \$1.3b of U.S. Government and Foreign Military aftermarket sales and product support.

Prior to these roles, George served as General Manager of Military Aircraft Center, Director of Maintenance, Repair & Overhaul; and Production Operations Manager - Transmission Manufacturing. He was also the Chief Manufacturing Engineer on the S92 and Comanche programs. George has experience in all phases of management, including operations, sales, and supply chain. He also has extensive experience in the development of new products and manufacturing processes.

George has four U.S. patents associated with the manufacture and tooling of aerospace transmission components. He has been published by the American Helicopter Society, and has received several customer, company, and community service awards. He is the Board Chairman for the Great Valley Chamber of Commerce and a Corporator for the Valley United Way and Lower Naugatuck Boy and Girls Club.

He holds a B.S. in Industrial Technology, Manufacturing and an M.S. in Organizational Management from Central Connecticut State University.

Melissa Turner, Sr. VP HR for Bridgeport & Greenwich Hospitals, Yale New Haven System, VP Talent Acquisition Yale New Haven Health System

Melissa is the Senior Vice President of Human Resources at both Greenwich and Bridgeport Hospitals and Vice President Talent Acquisition for Yale New Haven Health System. She holds a Bachelor's degree from the University of Kansas and completed the Wharton School of Business, Executive Education Program for Leadership Development.

Prior to healthcare, Melissa held senior Human Resource leadership positions within the consumer products and technology industries.



STEERING COMMITTEE MEMBERS

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<p>Amy H. Cunningham Executive Director Connecticut Health Council 31 Pratt Street, 5th Floor Hartford, CT 06103</p>	<p>Kate Hampford Donahue President & CEO Hampford Research, Inc. 54 Veterans Blvd. Stratford, CT 06615</p>
<p>Michael Gargano President/CEO St. Vincent's College 2800 Main Street Bridgeport, CT 06606</p>	<p>Betty Griffin Assistant Director Continuing and Professional Studies St. Vincent's College 2800 Main Street Bridgeport, CT 06606</p>
<p>Mickey Herbert President and CEO BRCC 10 Middle Street, 14th Floor Bridgeport, CT 06604</p>	<p>Joe Jenecaro Coordinator, Continuing Education Housatonic Community College 900 Lafayette Blvd Bridgeport, CT 06604</p>
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READING A

CURRICULUM

The Idea That Launched a Thousand Strategic Plans

By *Dan Berrett* | JANUARY 22, 2017

✓ PREMIUM



Kim Raff for The Chronicle

At Utah Valley U., a local employer offers scholarships and internships to encourage students to enroll in a two-year program in electrical automation and robotics technology.

businesses' needs.

The term is invoked so often that its victims have become familiar types: the out-of-work welder trying to skill up, the English major working as a barista, the graduate of a music program paying thousands of dollars to attend a boot camp to learn how to code. The skills gap, which has been tallied at as many as five million jobs, is also thought to bedevil employers who would step up their hiring if only they could find people with the right skills.

A single idea has come to shape colleges' plans for the future and assumptions about their role and purpose. It's called the skills gap.

Simply put, the skills gap is when industries have jobs to fill but can't find workers with the skills needed to fill them. For colleges, the implication is that this gap is their fault, that they aren't teaching the right things, and that they aren't being responsive to

Though the idea may hold intuitive appeal, its very existence has been questioned, and it has been plagued by fuzzy definitions. It's not always clear which skills, specifically, are lacking. Sometimes they're technical ones, like managing a robotics operation on a factory floor or using Excel in a cubicle. Sometimes it's so-called soft skills, like critical thinking or communicating well. Other times, the skills gap refers to dispositions like work ethic, persistence, or the ability to collaborate as part of a team.

This vagueness allows colleges to cite the skills gap as a reason to propose just about any remedy, as a quick tour of their strategic plans indicates. If global learning was once ubiquitous in colleges' mission statements, solving the skills gap is now.

The most-common interpretation of the skills gap is that institutions of higher education — often, community colleges — must attend to the needs of local businesses. It's a reason for colleges to start, say, a biotechnology program that will provide workers to a local pharmaceutical manufacturer, or to build classrooms decked out with new equipment to keep up with industry standards.

Or it can be taken to mean something quite different, like a general shortage of degrees. The strategic plan for the Pennsylvania State System of Higher Education, for example, observed that 43 percent of working adults in the state hold an associate degree or higher, while 57 percent of jobs in the state require such credentials. "The result," according to the plan, "is a 14-percent skills gap that must be closed in order to promote and sustain a strong economy."

Supporters of liberal education cite the skills gap as a reason to place more emphasis on teaching general skills like critical thinking, writing, speaking, and quantitative literacy.

Elsewhere, at places like Marquette University, the skills gap is cited as a reason to adopt alternative approaches to education, like creating flipped versions of existing courses. Such courses can help professors incorporate real-world problems into their teaching, says Michael R. Lovell, Marquette's president. Another tool is massive open online courses, which he says can help graduates certify their technical knowledge, which will help them keep their skills up to date after they graduate.

"Their jobs are going to be changing," says Mr. Lovell. "We're trying to prepare students for a future that's uncertain."

In other words, the skills gap is ever-present.

Worries about the employability of recent college graduates have been around for decades, but the idea of a skills gap acquired special currency in the years following the Great Recession, as the job market was slowly mending. In a 2010 speech, Narayana R. Kocherlakota, then the president of the Federal Reserve Bank of Minneapolis, observed that the rate of job openings had risen by about 20 percent over the previous year, but unemployment was high and even modestly rising, at about 9.5 percent at the time.

"Firms have jobs, but can't find appropriate workers," he said. "The workers want to work, but can't find appropriate jobs." The reason, he said, was a skills mismatch. And fiscal policy could do only so much.

"The Fed does not have a means to transform construction workers into manufacturing workers," he said.

But colleges can. From there, the idea took off, even though skeptics questioned its logic.

If skills gaps truly existed, some economists said, then areas of the country with plenty of jobs and not enough workers ought to be offering rapidly rising wages — which wasn't happening. Another economist argued that hiring difficulties existed not because workers had the wrong skills, but because businesses didn't pay well enough. Paul Krugman, the Nobel laureate who is now an economics professor at the City University of New York, wrote in *The New York Times* that the skills-gap argument was a pretext for not taking policy action, like increasing government spending to stimulate aggregate demand. Mr. Krugman later wrote that the skills gap was a "zombie idea" — a notion that should have been killed by a lack of evidence, but that continues to lumber on.



Kim Raff for The Chronicle

Students work together in Utah Valley U.'s mechatronics program, which the university began several years ago in response to requests from local employers, including a semiconductor manufacturer.

Part of the problem is that legitimate shortages often do occur, in limited contexts where certain skills in specific regions are difficult to fill. But the term often gets applied far more broadly.

Employers' expectations can complicate the picture. Many employers are ratcheting up the levels of education and experience they require. Sometimes that's because jobs are growing more sophisticated and complex, but sometimes it's not. The job-market-analytics company Burning Glass found that employers were requiring bachelor's degrees for jobs that don't need them: About two-thirds of the postings for executive

secretaries and executive assistants called for a bachelor's degree. Just 19 percent of those who already held those jobs had that level of education.

One reason that the skills gap maintains its hold, says Peter Cappelli, a professor of management at the University of Pennsylvania's Wharton School, is that it's sensational and plays into a longstanding narrative that American education is failing. But the idea has been subjected to relatively little rigorous academic analysis, he says, and it has been guided mostly by employers' self-interest.

If many colleges embrace the idea of the skills gap, says Mr. Cappelli, that's because it makes them appear like they're addressing a pressing concern of an important local constituency. "Using that phrase," he says, "sounds like you're paying attention to what businesses need."

For colleges, responding to the needs of business is often seen as a straightforward matter. All they have to do is look at the most-common unfilled job openings and find out which skills employers want candidates to have. Revise the curriculum accordingly, plug in students with the right skills, and then the gap will be gone.

Sometimes things really do work out this way.

In Rochester, N.Y., Todd M. Oldham, vice president for economic development and innovative work-force services at Monroe Community College, kept hearing how companies were looking for technicians with expertise in precision machining.

He looked at the data. Jobs requiring those skills were plentiful, and colleges weren't filling them. The region had about 100 more slots open each year than the number of graduates the area's institutions were producing.

Monroe already had precision-machining programs — a two-year associate-degree program and a condensed, one-year certificate option. It just wasn't producing enough graduates. So Mr. Oldham worked with his colleagues to pare down Monroe's one-year certificate into an accelerated 22-week version.

To bolster retention, students enter in a cohort with dedicated faculty members to provide continuity and student-faculty connection, as well as job counseling and placement. The program also strips out general-education courses.

The Ideal Candidate

Researchers in Wisconsin asked chief executives and human-resources officers what words came to mind when they thought of the skills that candidates need to succeed in entry-level jobs in manufacturing and biotechnology. Here's what they said, in decreasing order of frequency:

WORK ETHIC

TECHNICAL ABILITY

TECHNICAL KNOWLEDGE

LIFELONG LEARNING

PROBLEM SOLVING

COMMUNICATION

ADAPTABLE

SELF-MOTIVATED

INTERPERSONAL

TEAMWORK

EXPERIENCE

Source: Beyond the Skills Gap: Preparing College Students for Life and Work, by Matthew T. Hora, with Ross J. Benbow and Amanda K. Oleson

The results have been positive, says Mr. Oldham, and the approach may be replicated in other programs. The completion rate for the one-year program was 47 percent. For the accelerated version, it was 75 percent, of whom 74 percent, including recent graduates, found jobs.

"It's not the traditional college experience," Mr. Oldham says. "In the end, we're trying to create a worker."

But things don't always work out that well.

In 2012, state and local government officials in Superior, Wis., touted the plans of Kestrel, a small-aircraft manufacturer, to open a new plant and offer high-tech blue-collar jobs.

Kestrel had strong assets: a founder who was well regarded in the industry and millions of dollars in grants, loans, and tax credits. It just needed workers.

That's where Indianhead Technical College came in. It devised a two-year associate degree in composite technology, with an industry veteran as the instructor. The program would start with 20 slots for students, and the eventual graduates would help fill about 600 jobs at the plant.

The company and the college worked closely together. The classroom was designed to mirror Kestrel's shop floor. Kestrel would provide internships for students while they were in college.

But the plant was beset by delays and disputes over funding. Government officials and the company traded accusations of broken promises. The plant was never built.

Over the past three academic years, 22 students have enrolled in Indianhead's program. Five finished and found jobs, the college says, most of them with other aeronautics firms. The rest dropped out or found jobs before finishing.

In the spring, two more students are slated to graduate. Then the program will close.

Even when a program is well aligned with what many companies say they need, things still might not work out as planned.

Utah Valley University had heard from its advisory committee of local businesses, including IM Flash, a producer of semiconductors, that they needed more workers trained in mechatronics, which is a hybrid of mechanical and electronics studies.

As an institution that had grown from a career-and-technical college to a community college to a comprehensive university, Utah Valley was accustomed to such requests. And it tries to strike a balance between providing a broad liberal education and job training, says Matthew S. Holland, its president. "We're not just an appendage of industry trying to fill every quota they have," he said.

With money from the U.S. Department of Labor and with programmatic input from local companies, it developed two- and four-year programs in mechatronics engineering technology. It created new courses, hired a handful of full-time faculty members — and quadrupled the number of employees it produces for local businesses, including IM Flash.

On the surface, the partnership seemed like a clear win. But labor dynamics can be fluid and unpredictable, and students make their own choices about what they want to study. The company has had difficulty recruiting enough graduates from an existing program, a two-year degree in electrical automation and robotics technology, to meet its work-force needs. Students seem to prefer to pursue four-year degrees in fields like mechatronics, even though the company has a constant need for robotics technicians who can earn \$70,000 to start.

To fix this gap, IM Flash has started offering scholarships and a paid internship at the company almost as soon as the students start the two-year program. The company is willing to teach the necessary technical skills to its workers, and it still sees Utah Valley and other area colleges as valuable partners. Utah Valley's faculty members have experience in the industry, says Todd C. Russell, manager of academic relations and the intern program at IM Flash. They teach students how to solve problems, he says, and a degree signals a graduate's ability to commit and follow through.

Even if the material students learn in class isn't entirely applicable to the workplace, that's fine with Mr. Russell, because colleges do something more important. "Universities," he says, "teach people how to learn."

Mr. Russell's vision of the value of a college education sounds much like what an advocate for liberal education might say. It turns out that attitudes about the skills gap, and colleges' roles in fixing it, are similarly nuanced.

That's what Matthew T. Hora, an assistant professor of liberal arts and applied studies at the University of Wisconsin at Madison, and his colleagues found after they probed assumptions about the skills gap, among both educators and employers.

For their recent book, *Beyond the Skills Gap: Preparing College Students for Life and Work* (Harvard Education Press), Mr. Hora and his colleagues interviewed educators in Wisconsin's universities and technical colleges, as well as chief executives, human-resources directors, and shift supervisors in biotechnology and manufacturing companies. The professors and instructors described a shared vision of educating their students for the long term even as they felt pressures to train them for a job.

Tom Heraly, an electronics instructor at Milwaukee Area Technical College, knows that his students need to learn how to operate hardware and software, and to understand the importance of being on time and dressing appropriately. But he also tries to focus on developing their analytical skills and adaptability. "They have to grow with the company and with the technology," he said in an interview.

When his students are wiring circuits, for example, he asks them to explain not just what is supposed to happen, but to predict what else might occur, and to imagine the ways they could do it differently. The most important thing he can impart to them, he says, is "an attitude of discovery."

When Mr. Hora asked employers to rank the skills they sought, their answers were all over the place. Many said they looked for technical skills, but almost just as often they valued aptitudes like critical thinking, teamwork, communication, work ethic, and the ability to solve complex problems. One characteristic was so routinely sought out that it acquired its own shorthand, YOTF, for "Years Off the Farm."

The term referred to traits like work ethic, perseverance, and problem solving that farm work fosters. "You're getting up at six o'clock in the morning, you're working every night, you never get a day off," the head of a manufacturing group says in the book. "If something breaks down on the back 40, you've got to figure out how to fix it."

Mr. Hora concluded that when people talk about the skills gap, they mean a mix of things, only some of which colleges have much control over. "Our study is not an attempt to absolve higher education," he says. Colleges, he says, can improve teaching methods and instructional design to encourage active learning so that students develop what he calls 21st-century habits of mind.

But other groups are implicated, too. "It's broadening the terms of the debate and discussion," Mr. Hora says, "to include employers' responsibility, the role of culture, of caregivers, and higher education, to have a more realistic and informed discussion."

Employers may be starting to see the skills gap with similar nuance.

The skills that employers find most lacking tend to be soft skills, says Jason A. Tyszko, executive director of the Center for Education and Workforce at the U.S. Chamber of Commerce Foundation. But employers also complain about candidates' lack of promptness, he says, and their inability to pass a drug test.

Employers, colleges, job seekers, and families have a responsibility to close those gaps. And there are indications that employers are taking on more of those responsibilities, too. Last year, 48 percent of American companies surveyed by the Manpower Group said they planned to offer professional development to their own employees, quadruple the share that said the same thing the previous year.

But the problems with recruiting and training employees go much deeper, says Mr. Tyszko. "We have a system that operates backwards," he says. Educators develop curriculum without much input from employers. And while colleges often say their graduates, particularly in the liberal disciplines, leave their institutions with strong soft skills, employers have no way of really judging for themselves if this is true.

"Degrees are so opaque," Mr. Tyszko says. "We don't know what they represent."

Experiential-learning opportunities, he says, can offer employers a clearer glimpse of what graduates can do. Industry-sponsored innovation challenges allow companies to see candidates' soft skills in action. Such arrangements benefit all parties, says Mr. Tyszko. "This isn't about being a good civic player," he says. "This is about functioning in the modern economy."

At their core, concerns about the skills gap are really about how the many players in a region can spark broadly shared and sustainable economic growth.

The regions that have demonstrated this sort of growth tend to have something in common — prosperous advanced industries, says Mark Muro, a senior fellow and policy director for the Brookings Institution's Metropolitan Policy Program.

These industries, he says, tend to be high-tech innovators in fields like aerospace, automobiles, medical devices, and pharmaceuticals, as well as energy, telecommunications, and information technology. They conduct research and development, have long supply chains, and offer diverse and high-paying jobs for people of varying levels of education. "They have huge spillover effects in the economy," says Mr. Muro.

Colleges often play an important role in the development of these regions and industries, he says. Sometimes, colleges feed employees to local companies, many of which were founded by the graduates of those institutions.

One of the leading examples of these dynamics, he says, is in Provo, Utah.

Brigham Young University and Utah Valley supply the region with much of its work force, and they are credited with being major drivers of the area's economic success. Like Utah Valley, Brigham Young tries to maintain a dual focus on immediate work-force needs and on the horizon beyond.

"We want to make sure students have a job when they graduate, but the job isn't the end of the road," says Robert Gardner, assistant dean of external relations and technology for BYU's business school. "The university doesn't retool so quickly, and maybe that's a good thing."

There is a danger, after all, in linking too closely to a region's employers, says Mr. Muro, of Brookings. Pittsburgh has been able to reinvent itself from a steel town, for example, partly because its universities weren't simply trying to feed workers and managers to the local plants to meet their immediate needs.

"Universities help perform a role in repositioning," he says. "It's the production of human capital that makes them useful, providing well-trained and adept workers of all education levels who do better in responding to economic shocks."

Some gaps, it seems, are worth keeping.

Dan Berrett writes about teaching, learning, the curriculum, and educational quality. Follow him on Twitter @danberrett, or write to him at dan.berrett@chronicle.com.

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READING B

Wanted: Factory Workers, Degree Required

By JEFFREY J. SELINGO

JANUARY 30, 2017

When the German engineering company Siemens Energy opened a gas turbine production plant in Charlotte, N.C., some 10,000 people showed up at a job fair for 800 positions. But fewer than 15 percent of the applicants were able to pass a reading, writing and math screening test geared toward a ninth-grade education.

“In our factories, there’s a computer about every 20 or 30 feet,” said Eric Spiegel, who recently retired as president and chief executive of Siemens U.S.A. “People on the plant floor need to be much more skilled than they were in the past. There are no jobs for high school graduates at Siemens today.”

Ditto at John Deere dealerships, which repair million-dollar farming machinery filled with several dozen computers. Fixing tractors and grain harvesters now requires advanced math and comprehension skills and the ability to solve problems on the fly. “The toolbox is now a computer,” said Andy Winnett, who directs the company’s agricultural program at Walla Walla Community College in Washington.

These are the types of good-paying jobs that President Trump, blaming trade deals for the decline in manufacturing, has promised to bring back to working-class communities. But according to a [study](#) by Ball State University, nearly nine in 10 jobs that disappeared since 2000 were lost to automation in the decades-long march to an information-driven economy, not to workers in other countries.

Even if those jobs returned, a high school diploma is simply no longer good enough to fill them. Yet rarely discussed in the political debate over lost jobs are the academic skills needed for today’s factory-floor positions, and the pathways through education that lead to them.

Many believe that the solution is for more Americans to go to college. But the college-for-all movement, which got its start in the 1970s as American manufacturing began its decline, is often conflated with earning a bachelor’s degree.

Many high school students rush off to four-year campuses not ready for the academic work or not sure why they are there. Government data show that 44 percent of new graduates enroll directly in a four-year college, but based on recent trends, less than half of them will earn a degree within four years. And though two-year colleges have long been identified as the institutions that fill the job-training role, some 80 percent of community college students say they intend to go on for a bachelor’s degree, or they leave with generic associate degrees that are of little value in the job market.

Students in the United States are offered few feasible routes to middle-skill careers — jobs that require more education than a high school diploma but typically not a bachelor’s degree. The [National Skills Coalition](#), a nonprofit organization, calculates that middle-skill jobs — in computer technology, health care, construction, high-skill

manufacturing and other fields — account for 54 percent of the labor market, but only 44 percent of workers are sufficiently trained.

“The bachelor’s degree is the gold standard, but the higher education system has to create ways for students to choose training and education in their own time and sequence,” said Anthony P. Carnevale, the director of the Center on Education and the Workforce at Georgetown University. “Higher ed,” he said, “needs to respect the dignity of labor.”

Faced with a skills gap, employers are increasingly working with community colleges to provide students with both the academic education needed to succeed in today’s work force and the specific hands-on skills to get a job in their companies. John Deere, for example, has designed a curriculum and donated farm equipment to several community colleges to train technicians for its dealer network. About 15 to 20 students come through the program at Walla Walla each semester. Because they are sponsored by a John Deere dealership, where the students work for half the program, most graduate in two years with a job in hand. Technicians start at salaries just shy of \$40,000, on average.

Dr. Carnevale’s research has found that 40 percent of middle-skills jobs pay more than \$55,000 a year; some 14 percent pay more than \$80,000 (by comparison, the median salary for young adults with a bachelor’s degree is \$50,000).

Jobs like the ones John Deere offers are still associated in people’s minds with students who performed poorly in high school, those considered “not college material.” But to succeed in programs like those at Walla Walla, students need to take advanced math and writing in high school, academics typically encouraged only for those going on to four-year colleges.

Persuading students and their parents to consider the apprenticeship track is a tough sell, especially because companies want students who have a strong academic background.

Struggling to fill jobs in the Charlotte plant, Siemens in 2011 created an apprenticeship program for seniors at local high schools that combines four years of on-the-job training with an associate [degree in mechatronics](#) from nearby Central Piedmont Community College. When they finish, graduates have no [student loans](#) and earn more than \$50,000 a year.

“These are not positions for underachievers,” said Roger Collins, who recruits apprentices for Siemens at 15 Charlotte-area high schools.

Chad Robinson was one of those students. Ranked in the top 10 of his high school’s senior class, with a 3.75 grade-point average, he had already been accepted to the engineering school at the University of North Carolina at Charlotte when he told his parents he wanted to shift course and apply for the Siemens apprenticeship.

“They were very against it,” he said, until they went to the open house. “A lot of my friends who majored in engineering in college told me they wish they had done the apprenticeship because my work experience will put me ahead of everyone else.”

IT is not uncommon to find executives in Europe who got their start in apprenticeships, which are seen as a respected path to a profession in a variety of fields, from hospitality to health care, retail to banking.

In the United States, on the other hand, apprenticeships have long been associated with the construction trades and labor unions. That can be traced to a Depression-era labor shortage that led Congress to pass the [National Apprenticeship Act](#). The act formalized standards and empowered the Labor Department to certify training, which was mostly in manual labor occupations. Unions took on the task, tightly controlling apprenticeship opportunities and passing them down through the generations.

In the decades after World War II, registered programs expanded in number and type, with the addition of fields like firefighting and medical technician. But apprenticeships never caught on, relegated to a second-class career track as college enrollment ballooned in the 1960s and '70s, and more recently mirroring the falloff in the influence and membership of labor unions.

The Department of Labor’s registry now lists 21,000 programs with about 500,000 apprentices, which sounds impressive but represents only 1.5 percent of 18- to 24-year-olds in this country and is far short of demand. Still, participation is up 35 percent and the number of programs by 11 percent since 2013.

Apprenticeships are making a comeback thanks in part to bipartisan support among lawmakers. In the last two years, Washington has allocated \$265 million to spur [programs](#). President Obama’s secretary of labor, Thomas E. Perez, a strong proponent, attempted to rebrand apprenticeships to appeal to educators and parents. During his tenure, the department established a partnership between registered community colleges and sponsors that allowed on-the-job-training to count as academic credit toward a degree.

“Apprenticeship is the other college, except without the debt,” said Mr. Perez, who had a goal of doubling the number by 2018. Advocates are hopeful that the trend will continue with new leadership in Washington, given President Trump’s familiarity with construction.

While the building trades still dominate, the types of occupations offering internships have expanded to include jobs like pharmacy technician, I.T. project manager and insurance adjuster. Aon, the insurance and financial services company, last month announced a program in Chicago in which high school graduates get training in account management, human resources, financial analysis and information technology while earning an associate degree from Harold Washington College or Harper College.

Gov. John Hickenlooper of Colorado wants to make apprenticeships ubiquitous in high schools around his state. Later this year, backed by \$9.5 million from Bloomberg Philanthropies and JPMorgan Chase, Colorado will begin offering hands-on training, starting in high school, in financial services, information technology and health care as well as

manufacturing. The goal is to make [the program](#) available to some 20,000 students at all academic and income levels within the next decade.

“Apprenticeships can start with a job and end with a Ph.D.,” said Noel Ginsburg, who heads up the program and is president and founder of Intertech Plastics in Denver. The initiative was inspired by a visit that Mr. Ginsburg and dozens of politicians and business and education leaders made to Switzerland in 2015. Although German apprenticeships are often held up as the model, Mr. Ginsburg preferred the Swiss approach, which involves a wider range of fields.

In [Switzerland, compulsory education](#) ends after ninth grade, when students can choose either an academic or a vocational path. Between 20 percent and 30 percent of students choose the academic track, which focuses on the few professions, such as medicine and law, that require a university education; nearly 70 percent choose the vocational track, with programs for about 230 occupations.

Beginning in 10th grade, students rotate among employers, industry organizations and school for three to four years of training and mentoring. Learning is hands-on, and they are paid. Switzerland’s unemployment rate for the young is the lowest in Europe and about a quarter that of the United States’.

Here in the United States, most students are offered a choice between college or a dead end. The college-for-all movement, it seems, has closed off rather than opened up career options. For working-class voters who feel left out in this economy to be able to secure meaningful jobs, educational pathways must be expanded and legitimized — in the process redefining and broadening what is meant by higher education.

“The silver bullet comes by adding more training opportunities during and after high school,” said Dr. Carnevale. “And whatever you do with training, you need to call it college. You want to make people feel good about the path they choose.”

Jeffrey J. Selingo is author of “There Is Life After College: What Parents and Students Should Know About Navigating School to Prepare for the Jobs of Tomorrow.”