



REGISTERED  
APPRENTICESHIP  
*Earn. Learn. Succeed.*

**U.S. Department of Labor Office of Apprenticeship**



## Report on Industry Roundtable Discussions



*Submitted by:*



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## AMERICAN APPRENTICESHIPS

### Key Findings from Industry Roundtables

#### I. OVERVIEW

The Office of Apprenticeship conducted industry roundtables across the country in June 2014 in six key industries, as follows:

- Construction – Washington, DC
- Energy – Houston, TX
- Health Care – Boston, MA
- Information & Communications Technology – San Francisco, CA
- Manufacturing – Chicago, IL
- Transportation and Logistics – Atlanta, GA

More than 250 employers, intermediaries, and workforce professionals attended these sessions.

#### II. TALENT CHALLENGES

The number one talent challenge expressed by attendees at sessions across industries was the aging workforce. Skilled Baby Boomers are retiring and the current pipeline of young workers to replace them in the next five to ten years is not large enough to meet industries' needs. For several sectors – notably IT and Transportation/Logistics, the future workforce needs far outweigh the pipeline of available workers.

In addition to challenges with the sheer number of staff replacements needed, many attendees around the country lamented the lack of depth and breadth of industry knowledge by new candidates, as well as their general deficits in soft skills.

Worker retention was another issue of concern for many employers. While this is an ongoing challenge for businesses, it has particular relevance for Registered Apprenticeship (RA), due to the level of investment a business must make in its apprentices. Thus, some attendees indicated that this is a potential impediment to using RA.

Participants from several industries (Construction, Manufacturing, and IT) discussed the need to diversify their workforce and attract more women and minorities to these fields.

Across sessions, attendees cited the urgent need for IT professionals, especially in cybersecurity. While there are large numbers of candidates completing training in these areas, the demand outweighs the supply across industries.

### III. OPPORTUNITIES FOR THE REGISTERED APPRENTICESHIP SYSTEM

A variety of recommendations were offered for expansion of RA. The need for outreach and marketing was a universal theme across sessions. There is an urgent need for the Office of Apprenticeship (OA) to develop materials that will help state and local systems conduct outreach to students, parents, guidance counselors, veterans, dislocated workers, and others.

Some participants advocated initiating outreach about RA as early as grades K-6; at all sessions, participants agreed that extensive education is needed about RA at the high school level. The case was made repeatedly to attract young people to RA – whether in skilled trades or less traditional industries for RA, such as IT or health care.

Linked to this need to actively promote the RA system was the recommendation that OA help industries to upgrade the image of the skilled trades and the career and financial success that can be achieved through the RA model. Participants noted repeatedly that a present day manufacturing plant or logistics site is quite different than in the past. Exposure to current operations could begin to enhance the image and value of these occupations, especially to youth and their parents. One “hook” suggested for enticing youth to skilled trades is to focus on the technology components of many jobs.

Several attendees praised the value of RA as a means to grow talent and develop worker skills customized to a company’s needs. Others recommended standardizing curriculum, to the extent possible, within an industry to streamline related instruction methods and equipment needs.

A broad variety of session attendees suggested that OA facilitate closer collaboration between RA and the public workforce system. Enhancing this partnership could have several benefits, including:

- Developing methods for WIA to fund related instruction;
- Funding supportive service costs through WIA;
- Promoting collaboration to ensure apprenticeship partners are at the table for new initiatives and funding opportunities; and
- Facilitating outreach to businesses within key industry sectors.

Another partnership recommendation provided at several of the sessions was for OA to facilitate the process of businesses forming industry consortia. This would allow multiple companies to share the costs of curriculum development and training equipment purchases. Many participants noted that all can benefit from such an approach and it can entice additional small businesses to get involved with RA.

Similarly, private-public partnerships were recommended. In several of the discussions, participants emphasized the need for community and technical colleges to work with workforce agencies to promote RA to the business community. Other community intermediaries, including labor organizations, offered to assist with the formation of partnerships.

Attendees across sessions requested that OA develop data on apprenticeship outcomes, especially its return on investment for employers. It was noted that in Canada and European countries with strong apprenticeship systems, these data have been developed and are used as a selling point to attract additional businesses to the model.

Another theme that emerged from the sessions was the request that OA determine how to help businesses fund the RA model. The notion of business consortia, noted above, was discussed as a way to share costs and maximize the value of the RA approach.

Several of the industries were able to identify a variety of occupations for which apprenticeship could be developed or expanded. These are depicted below:

Occupational Areas of Opportunity	
Industry	Applicable Occupations
<i>Energy</i>	Off-shore technician
	Retrofitting
	Refinery equipment operators
	Mechanical integrity staff
<i>Health Care</i>	Post-acute care
	Direct support workers
	Patient care technicians
	Health care management
	Nursing specialties
<i>ICT</i>	IT security
	Network engineers
	Software engineers
	Virtualization
<i>Transportation/Logistics</i>	Commuter rail engineers
	Entry-level warehouse positions
	Feeder drivers
	Rail computer operators
	Signal switchers
	Over the road drivers

## IV. CHALLENGES FOR REGISTERED APPRENTICESHIP

Many more opportunities than challenges were raised in the sessions. However, key themes emerged in the area of challenges. The chief concern was the cost of related instruction, especially for small businesses. Suggestions were offered by participants for offsetting these costs (e.g., partnerships and business consortia).

Another concern raised across sessions was the ability to attract qualified instructors, as in many instances they can make far more money working within the industry than by teaching those skills to others. Community colleges also cited challenges with limited funding for training equipment and labs.

Many participants urged OA to streamline paperwork and record-keeping requirements for businesses. This was seen as a way to promote additional acceptance of the RA model, as well as helping current RA sponsors.

## V. PROMISING INNOVATIONS

Across sessions, participants were eager to share models and practices that are successful. Many of these were location-specific; however, they can be loosely grouped into a few categories:

### A. Educational Models

Working with Boards of Education; high school successes; partnerships with community colleges; pre-apprenticeship models

### B. Statutory Support

Texas law requiring workforce exposure for high school students; South Carolina law providing tax credits for sponsoring companies and apprentice tuition assistance

### C. Partnerships

Many creative solutions are underway to bring together the business community with the workforce system, community partners, intermediaries, state and federal partners, and the community college system to develop strong, replicable models.

### D. Vermont HI TECH

This organization was mentioned in multiple sessions for its strong models around pre-apprenticeship, providing existing workers with on-site instruction and other successes in partnering with education and the business community.

## VI. KEY AREAS OF SUPPORT NEEDED

First and foremost, participants wanted assistance with marketing RA and branding the apprenticeship system as a valuable career model. There was great passion around educating youth, parents, and guidance counselors regarding attainment of a middle-class lifestyle through employment in skilled trades. Participants requested outreach materials and a tool kit for branding, marketing and outreach.

OA was urged to invest funds in training equipment and quality instructors at community colleges. Leveraging opportunities to connect businesses and community colleges was also cited.

Participants urged OA to work with workforce programs in ETA, as well as with HUD, the Departments of Education and Transportation, and others at the federal level to:

- Streamline paperwork, processes, and requirements for business participation;
- Promote alignment for performance measures and braiding of funds (especially with WIA); and
- Work with the post-secondary system to ensure college credits for RA related instruction and to promote articulation and stackable credentials.

Notes from each of six Industry Roundtables are attached in the appendix.

## APPENDIX A: Construction, June 12, 2014

### I. Leadership Opening Remarks and High-level Overview of Registered Apprenticeship (RA)

- **John Courson, President and CEO of the Home Builders Institute:** Mr. Courson extended a welcome to Secretary Perez, fellow construction industry executives, and guests. HBI applauds the President's goal to double the number of apprentices. The goal of all involved is to get resources to match. HBI has four Registered Apprenticeship construction trades; their challenge is to expand these programs to broader venue. Part of this discussion is to break down barriers. In April, it was reported that residential construction accounts for 54% of private construction, but only 3% of those workers are apprentices. HBI pledges that they look forward to partnering with the Secretary of Labor and the President to move forward to solve this problem, and create an upward path of mobility for workers in the construction industry.
- **Lenita Jacobs-Simmons, Regional Administrator for ETA Philadelphia:** Ms. Jacobs-Simmons expressed her pleasure in overseeing the workforce development system, which serves millions of people in many ways, one of which is apprenticeship. She hopes to build partnerships and integrate the system to ensure people earn a livable wage and move into the middle class. The Secretary, the President, and ETA are committed to this. Having worked with the Secretary in Maryland, Secretary Perez understands the value of the work we do.
- **U.S. Department of Labor Secretary, Thomas Perez:** Thanks extended to HBI for hosting the event and to the participants for coming together.
  - Veterans have tremendous interest in training. The construction industry has committed to embed the veterans hiring protocols into their practices.
  - The President was at Worcester Technical High School, whose first graduates were ironworkers and woodworkers. The latest graduates were prepared to enter the middle class because of the education they had received, having learned job skills in career and technical education.
  - Because of the national lack of attention to career and technical education, there is a predicament in the U.S.: businesses and labor organizations have jobs to fill, but lack people that have the skills to fill them. In recognizing groups in attendance, he cited his recent trip to the Finishing Trades in Philadelphia, PA, an example of labor/management partnership turning out the next generation of professions making \$26,000 or more in the Philadelphia area.
  - There are tremendous opportunities across America for people to get into apprenticeship programs that provide pathways to the middle class, providing businesses to fill their workforce needs; we need all the partners at the table. Secretary Perez said he met a man at an IBEW training facility in San Francisco who compared his

- Journeyman's license to the Golden Ticket in *Willy Wonka & the Chocolate Factory* - at 26 years old he's making \$70,000 a year and his skills are portable.
- The workforce initiative proposed by the Vice President has several basic goals: make the workforce system more user friendly and responsive to the needs of employers and jobseekers alike, promote and reward innovation, ensure that stovepipes are imploded within the federal system, and shine a light on apprenticeship across a wide range of industries.
  - The Secretary's discussions with other countries that employ apprenticeship have shown him that we are not the leader in this area; we need to do a better job. 375,000 people are registered as apprentices in the U.S.; in contrast, Germany has 1.8 million apprentices, where apprenticeship and higher education are viewed as equal. We need to make sure apprenticeship has the same stature in the U.S.
  - The President's initial \$100 million commitment is designed to lift up apprenticeship, and move toward doubling without sacrificing quality for quantity.
  - The goal of every generation is to do better than the one before; to do so, we must reintroduce people to apprenticeship. We need to adjust parents' perception of, and education about, Registered Apprenticeship, and clarify to them that these programs are accredited.
  - Cooperation between apprenticeship and YouthBuild creates sustainable career ladders for at-risk youth.
  - We are all in this together, but have much to learn. Today and in the weeks to come, give us your advice, and show us your great programs. Measure our progress in efforts to double the number of apprentices; channel creativity into action.
- **JJ Raynor from the White House:** The White House is excited to hear input to how apprenticeship can be used as a path to middle class.
  - **Ken Rigmaiden, General President, International Union of Painters & Allied Trades:** Mr. Rigmaiden expressed excitement by the vision and direction of the President and Secretary Perez. He himself benefitted from Registered Apprenticeship, having started out as apprentice; he still carries his completion wallet card with him. He feels we need a better marketing program for Registered Apprenticeship. Practitioners and theorists need to intersect with program alignment, articulation agreements, and linkages with community.
  - **Bob Baird, Vice President of Regulatory Affairs, Independent Electrical Contractors:** Registered Apprenticeship is a proven system of training and education to the middle class. The workforce is aging: the average apprenticeship age is 33. We need to market the effectiveness of the apprenticeship model, and both marketing and outreach need to be improved. Apprenticeship is a partnership between the apprentice, business, employers, and government: each needs to do their part.

## II. Discussion Questions

### 1. What is the key selling point in recruiting apprenticeship to the construction industry? What is the key workforce issue that concerns you the most?

- **Nancy Dischnat:** A key selling point is that some states have standardized articulation pathways and agreements, which is important in getting more apprentices involved. Apprentices are jointly funded by unions and business and industry, a key issue that can be built upon. There are guaranteed wages and benefits through apprenticeships and collective bargaining agreements, as well as portability of credentials. The challenge is the pipeline – we need to grow apprentices to meet labor market demands now and in the future.
- **Keith Albright:** Mr. Albright was directed to apprenticeship by a guidance counselor; at that time, apprenticeship was a prestigious position. This is no longer the feeling with high school guidance counselors. We need to reintroduce and reeducate people and educators about key paths to apprenticeship. Career path is unlimited, and the earnings are unlimited; this message must be sent to educators to reintroduce this information to high schools.
- **Bob Baird:** We do not want to separate apprenticeship from post-secondary education. We are a form of post-secondary education equal to, if not better than, some other forms.
- **Julie Squire:** Related to the image problem is acquiring skills at an early age. The lack of things like shop classes in high school means that students are graduating without knowing how to use a measuring tape.
- **Mike Oscar:** Students right now do not have the tangible skills, and also lack soft skills and language skills. His company needed to institute a pre-apprenticeship program for students to be able to pass the tests. Also, we are looking at different age demographics; the current apprentices they are attracting are in the 25-30 year age range, or ages 50+ looking for a stable job.
- **John Courson:** The Association for State Boards of Education has a new working group, which he is chairing, to educate other State Boards of Education about things like apprenticeship training in skilled trades. He encouraged participants to engage with them.
- **Ken Rigmaiden:** One of the challenges is trainers, the need to match capacity and ability to provide training to where the work is located. His organization has made investment in the Gulf Coast - over \$70 billion in construction work is going on in refineries and water treatment areas. The opportunities are there, but the organizations must make the decision to invest in those locations.
- **Mark Drury:** Educating parents is key. Many people believe that college is the only pathway to success. We are at the lowest dropout rate in U.S. we have ever had. We need to look at

- the different ways that people learn. We need to educate the educators and educate the parents, and open up opportunity for people to enter construction.
- **Christopher Monek:** Youth are attracted by technology. Technology in construction may attract tech-minded youth.
  - **Anthony Darkangelo:** It is the influencers of potential apprentices that tell them that this is not a path for them. The story needs to be illustrated of going from being an apprentice to being an owner. Any step in between is a great place to choose. They should see the career progression in schools on posters.
  - **Lenita Jacobs-Simmons:** We need to identify best practices, such as the partnership in Virginia between Northrop Grumman and Thomas Nelson Community College. Northrop Grumman has an active apprenticeship program that recognized they were not getting the high school kids into the trades. They did a series of public service announcements and promotional activities to use as outreach.
  - **Lewis Brown:** We need to convey how apprenticeship and college parallel as viable options. We must also have access to the school system through the guidance systems in order to reach the students and convey benefits such as linkages with colleges and community colleges. Students can come out as skilled craft persons with degrees. In DC, they do a career day with guidance counselors and program sponsors, so that guidance counselors and educators can hear apprenticeship requirements firsthand. Many apprenticeship programs have the same requirements as college programs; they need to view apprenticeship as equal to college.
  - **Tom Cecere:** The Apprenticeship School in Virginia, which graduates approximately 175 apprentices a year, reached out to the community college. Much of their curriculum is articulated, and many students go on to places like Old Dominion University. Contractors have approached him with problems regarding talking with educators. He has gone in with funding to have guidance counselors spend 10 weeks shadowing industry programs in order to understand the skill sets and competencies for a given trade.
  - **Deb Rohrbaugh:** Her company would like to inspire students with an appreciation for skilled trades, to develop a passion about the work they do. They believe that waiting to age 18 is too late; instead, they target middle schools. The educator in the workplace is definitely important. Sponsors need to participate in career fairs and mock interviews.
  - **Tom Kriger:** Mr. Kriger underscored the importance of guidance counselors. DOL has great marketing for this meeting, but there is a greater need for materials for teachers who want something to “put up on the wall”. Could posters be made available on DOL website for download? End users, particularly federal agencies, need to put language into procurement, such as language in bids and contracts for using veterans, etc.

- **Art Lujan:** The key to attracting people is opportunities, current and future. We need assistance in preparing students for apprenticeship by enhancing life skills. We need to strengthen apprenticeship readiness systems across the county, and ensure those organizations receiving funding are tied into Registered Apprenticeship system, and that they use meaningful curricula. The biggest barrier they see is not having reliable transportation. This is a problem across the country; because students have lost their driver's licenses. This must be addressed in order to connect folks in communities to get into Registered Apprenticeship. There must be apprenticeship utilization agreements in communities and agencies to ensure we are selling people on the opportunities.
- 2. How do we further expand opportunities in Registered Apprenticeship in the construction industry?**
- **Keith Albright:** Streamline the application process. Many programs require in-person applications, but many students (especially in Job Corps) are hundreds of miles away. Many of these students would be interested, but they have to take off work to attend the interview and take the tests. He suggested online testing for apprenticeship to attract more people to the industry, and also reduce expenses for the organization.
  - **Daniel Hogan:** Tie licensing to the practice of construction, like is done with cosmetology. Link this back to successful completion of educational opportunities such as Registered Apprenticeship.
  - **Tony Darkangelo:** Companies are concerned about not having enough people to do the work. Trillions of dollars are at stake.
  - **Bob Baird:** Many areas do not require apprenticeship. We need to make it easy, something that people want to do. It is too easy to say no when it comes to regulation. Incentives to say yes: tax credits, convince owner-groups to specify use of apprentices on jobs, educate companies to the value of people trained on the job and the retention of that workforce, make it easier to apply for apprenticeships, and make it easier for sponsors to provide technical assistance rather than just enforcement.
  - **John Schortt:** Track more apprentices by using Pell Grants, which should be made available for apprentices to use for their Related Training Instruction.
  - **Rafiq Munir:** HUD just executed an agreement with labor to increase opportunities for YouthBuild graduates. This is encouraging recipients to work with YouthBuild grads to offer more Registered Apprenticeship opportunities. They are looking forward to partnering with the building trades to increase apprenticeship opportunities.
  - **Annie Leonetti:** We need to streamline the application process. If there is a waiting period after someone has decided to enter an apprenticeship program, they are more likely to choose another path.

### 3. Are you going to expand your program into particular occupations, or do cross-industry sector work in your apprenticeship programs?

- **Bob Pleasure:** We need to have bigger partners engaged, like Disney, Toyota, and Exelon Corporation, all of which account for a major force in construction. We also need to scale programs that work, utilizing more end user/owner representatives to accomplish this on a wider basis.
- **Nancy Dischnat:** Her organization put workforce coordinators in the major high schools to work with guidance counselors and students so they would understand more about apprenticeship: what are the jobs/skills/requirements, and how do they get access to things like apprenticeship programs. They are also very active in career and technical education; can it be more closely connected to the Office of Apprenticeship to ensure that there are valid pre-apprenticeship programs?
- **Ken Rigmaiden:** The real thing to be aware of is that apprenticeship programs are subject to their respective Boards of Trustees. We must not just train in technical areas, and must not build false hope. Many Boards don't understand apprenticeship enrollment requirements, and that it's not just about skills of apprenticeship, but also about the soft skills. We must be aware of this, and link with those that have the same interests – people that want the “golden ticket” that Secretary Perez discussed. There need to be better outreach to communities of, for instance, veterans and women, and create the linkages between community, training, and industry.
- **Bob Baird:** Career and technical education is non-existent in many schools, which are college-prep based.
- **Crystal Thrower:** There are companies who register people year round. Regarding women in construction: they are working with Fairfax County Department of Housing and Urban Development, who were given 10 options of move-to-work, and are having a series of events to introduce 100 move-to-work families to apprenticeship programs in the area. Career Counselors are used within the community college system, and are better than guidance counselors because they are career oriented and not numbers-going-to-college oriented.
- **Tom Cecere:** Mr. Cecere would like to see a webinar conducted for educators with best practices and career coaching.
- **Dennis Torbett:** The key to expanding is to encourage smaller employers to participate in Registered Apprenticeship by offering financial incentives, tax credits, OJT reimbursement, or even a mentoring approach - having employers mentoring each other.
- **Donald Prather:** They did a survey of their membership: over 60% of their business owners did not attend a four-year college. They came up through trade schools, high schools and apprenticeship programs.

- **Bob Baird:** The goal is to prepare people to grow within the industry, providing them with the basic knowledge technically and mechanically to work throughout the industry. Many of their apprentices have grown in their careers into management positions.
- 4. What solutions that you would like to see expanded for overcoming these gaps or challenges? What things would you like to see taken up to scale? Also, are there any additional ways in which you could be supported to help implement or expand solutions?**
- **Lewis Brown:** His organization has established several ways to expand apprenticeship opportunities. They have established pre-apprenticeship directly with apprenticeship sponsors. They allow those sponsors to determine how many individuals to accept, with the condition that the term of training will be automatically accepted as regular apprentices, providing they meet the eligibility requirements. The completion rate for this transition process is almost 60%. One of their initiatives is a Step-Up Apprenticeship, which was started during construction of a new convention center. The apprentices are limited to 12 months of indenture. Participants are employed and receive their Related Instruction, and do what is required to be eligible to participate in regular apprenticeship programs working on Davis-Bacon projects without employers being subjected to wage and hour penalties.
  - **Cindy Sheridan:** They have a lot of smaller contractors that hire apprentices. Some of their apprentices go to school online for a day instead of an onsite school. They also have apprentices that have issues attending onsite schools, so they have options for online schooling for all of their classroom training.
  - **Bob Pleasure:** In addition to the Registered Apprenticeship College Consortium, work needs to take place to get American Council on Education and NCCRS to figure out how to reduce cost of assessment for learning received during apprenticeship, and to rationalize these two systems together. It would be valuable to consider the costs the apprentice has for general education credits; some states pay for those costs. Instead, the federal government has given \$500 million to community colleges, in effect building two competing systems.
  - **Mark Drury:** We must identify that we share the same interests. In Maryland, the Workforce Investment Board put together a task force to look at workforce needs for the next 20 years. They produced a paper for the Governor, which resulted in the Maryland Center for Construction Education and Innovation, [www.MCCEI.org](http://www.MCCEI.org). This has become a clearing house for apprenticeship programs. We need to look at best practices across the country, take the formula, and replicate them.
  - **John Courson:** Mr. Courson suggested that messaging needs to be ramped up to highest levels. The President's and Vice President's message points need to include the word "apprenticeship".
  - **Crystal Thrower:** We must also recognize that we are not a single language society; related instruction is mostly conducted in English, which results in exclusion of an entire subsection

of people. There must be opportunities to conduct related instruction in languages other than English.

**5. Are there any other ideas around support or technical assistance, or things that would be useful to you in order to expand apprenticeship in this industry at the local, state, or national level?**

- **Ken Rigmaiden:** There need to be specific Veterans programs to provide training before they muster out of service. These people are tailor-made for this type of training. There needs to be more work with community groups that provide soft skills, like the Job Corps program. There also needs to be more women in the trades.
- **Ralph Neidert:** There must be requirements, by incentive or regulation, for more people who enter the workforce to be registered apprentices. We must have more than 20% of the workforce be apprentices, and make sure people entering the workforce receive the training.
- **Tom Cecere:** In Virginia, they initiated the National Guard as part of their apprenticeships. They also initiated multiple apprenticeships, where one craft leads to another. Participants receive certifications on different levels.
- **Lee Worley:** Mr. Worley believes there needs to be more advertising and promoting the trade. Apprenticeship is not a dumping ground for non-college bound students. It is a form of secondary education leading to a college degree, and that's the type of branding it needs to have.
- **Tom Kriger:** Mr. Kriger has looked at the data that has come out of Great Britain, especially the tax credits involved. He cautions that any consideration of tax credits must be thoroughly thought out. The British are experiencing a backlash about the quality of the programs: 10% of their new apprentices were part of a supermarket chain that had a 6-month program. We need to maintain the integrity of legitimate apprenticeship programs.
- **Robert Angelo:** School boards were afraid of apprenticeship programs in New York and Long Island. He believes we need to establish more demand for apprenticeship programs using state and local laws.
- **Mark Drury:** Technology is not the same as it used to be. In 2004, the Construction Users Roundtable surveyed membership of decision makers on construction projects: 90% of the decision makers could not read blueprints. Now, with 3D modeling, more people are engaged. There is a new level of scrutiny now. Employers must see the importance of doing it right the first time, because industry can't bear the costs of mistakes.

### III. Roundtable Wrap-Up:

- **John Ladd:** Thank you to John Courson and the Home Builders Institute facility for their hospitality.
- **Lenita Jacobs-Simmons:** Thanks to all for participating and willingness to work with us to meet the challenges.
- **John Courson:** The enthusiasm with Secretary Perez emphasizes the importance of this discussion. Talk is good, action gets results.

## APPENDIX B: Energy, June 17, 2014

### I. Leadership Opening Remarks and High-level Overview of Registered Apprenticeship (RA)

- **Dr. Rand Key, Senior Vice Chancellor Lone Star College**, welcomed participants. He noted that the college recently opened Lone Star Energy & Manufacturing Institute which is a hub for businesses with employees currently working or seeking a career in the oil and gas, alternative energy, or mechanized (automated) production industries. Lone Star College has the customized, hands-on, competency-based technical training offerings to develop employees' talent and business needs. The institute works in collaboration with Lone Star Corporate College and the six LSC campuses.
  - Students complete job-related programs
  - Certification programs and course offerings for career and technical education, college credit and corporate training
  - Pre-apprenticeship and apprenticeship programs
- **Dr. Paula Gant**, Deputy Assistant Secretary for Oil and Natural Gas, U. S. Department of Energy, stated the Natural Gas Industry has been in a high demand growth period from 2011 – 2014 for skilled workers in Natural Gas, Wind and Solar Energy and there has been a 26% increase in supply growth.

She further stated, there is a shortage of Welders in the Oil and Gas Industry alone in Kansas; as they are importing skilled Welders. She indicated that the keys to getting this right include:

- Economic Development locally;
- Train workforce at the local level;
- Replace retirement workforce with new people with real skills; and
- Close the gap between organization and industry and focus on Workforce Development.
- **Nicholas Lalpui**, Regional Administrator, Region IV/Dallas, U. S. Department of Labor, Employment and Training Administration, stated that there are presently skills gaps faced by the energy industry.
  - 61% of employers have challenges in employing a skilled workforce with the right talent for today's energy industry needs
  - 9 million Americans are presently unemployed
  - \$26,000 is the average college debt
  - By 2020 there will be a 22% growth in apprenticeship. However, training is not aligned to business and industry needs to fill openings and expand the workforce.
  - Colleges need to engage on the curriculum side as well

### How Do We Address the Workforce Turnover?

- Oil and Gas Technology is expanding and changing
- Need for Certifications
- Demographics plays a vital role on the existing Welding Workforce
- U.S. is in competition with the global market and it's harder to compete
- Quality is becoming more and more important

### How Do We Deal With the 9 Million Unemployed, Business and Industry Need?

- Fill openings with career ladder positions/training
- Apprenticeship checks all the needs; it's portable, recognizable nationwide, and addresses industry's needs

### How Can We Help Industry Needs Focus on Employment?

- Have state and local grantees
- Engage more with Community Colleges
- Work Based Learning will close the gap
- Look at Labor Market Data
- Hold grantees accountable for career results
- Train for jobs that are in demand by industry
- Have pockets of excellence and take across the nation
- Address employment and supportive service needs, such as: medical, transportation and or food stamps
  
- **Nicholas Lalpui** - Apprenticeship can meet the business and industry needs through:
  - Education;
  - Certification of skills that industry needs;
  - Apprentices addresses the needs of industry; and
  - Apprenticeship helps defer the cost to close the talent gap.

Following these presentations, OA Director John Ladd provided an overview of Registered Apprenticeship and the process for the discussion. John asked, "How can Apprenticeship address your talent needs?" Dr. Helen Parker, Maher & Maher, led the discussion.

## II. Discussion Questions

### 1. Industry's needs – what are your skilled talent needs?

- Find and attract skilled people
- Developing competencies within company
- ROI
- Replacing aging workforce
- Turnover – investing in training someone who leaves. How do you identify candidates more likely to succeed on the job?
- Cost is the one commonality of bringing candidates in
- Concern for mitigating the loss whether being trained during high school summer program and up
- Need to develop candidates' basic math skills and other soft skills
- Create consortia of companies to share the cost of training equipment
- Form sector councils to get industry members talking to each other
- Staff need soft skills

### Workforce Participants Table

- Not being able to find skilled workforce
- Better coordination at every level, both local and state level in finding resources
- Lack of understanding about Registered Apprenticeship
- Educating the workforce system on Registered Apprenticeship
- Funding is a universal problem
- Lack of resources internally
- Reimbursement of training cost
- Funding at local and state level

### College Participants Table (Presidents and Deans)

- Problem identifying qualified instructors
- Retirees are not always a good match due to technology changes
- How to attract younger instructors
- Having resources to hire skilled welders alone
- Having resources for labs and equipment to keep up with industry needs

### 2. What are the opportunities for RA to meet some of your needs for skilled talent?

- Training within a company
- Development of a comprehensive action plan to address middle skills gap

- What if companies asked for a time-based commitment to the company when they pay for apprentice training?
- Engaging youth at a younger age (e.g., high school students during the summer) would help with retention and support the program investment
- In addition to youth (who may not be ready to think about careers), focus on the 23 – 25 year old individuals who are underemployed
- Need help marketing the respectability of skilled trades – help parents understand kids can work on college degree while they are working
- Great opportunity to rebrand apprenticeship

### **3. What are the challenges to utilizing RA to build your talent pipeline?**

- Confused about Registered Apprenticeship
- Don't see the value in Registered Apprenticeship, the tax credit
- Company deterred by use of term "registered." They have an in-house apprenticeship program. Would not want the government to take control of their training program
- ROI not an added value
- Company would like to link with Lone Star College – but they do not want government in the way
- Need more awareness of career paths outside of four-year colleges

### **4. What are some of the innovative solutions that could be expanded and replicated? Please tell us more about your experience:**

- Associations within apprenticeships to purchase equipment jointly
- Community Colleges (Have equipment on neutral grounds and establish a period of time for their training needs)
- Sharing Cost: Addressing Houston middle skills gap
- Look at Germany's and Canada's models and see what works

### **5. What services would you value to support your talent development strategies?**

- Technological investment
- Human capital investment
- Welder Training/Hyber Carbon Industry on equipment (Partnering with Lone Star rather than an outside source in training)
- Bridging the gap and partner with Lone Star with the equipment in place to train staff
- More frequent meetings to keep the conversation going

**6. The Department is poised to make a significant investment in expanding RA programs nationwide, via a competitive SGA. What support would you need/how can we assist you?**

- Invest funds in the community college system

**7. What kind of commitment might you be able to make today? How can OA staff support you in pursuing that commitment? What else do you need from OA to enable your engagement?**

- Reframing of Apprenticeship/Rebranding of Apprenticeship at a National Level is important
- Community College: Let's take a look at the Canadian model as it's based on the German model
- Help community college market to America's workforce
- Invest in Long Star College having their own training programs/equipment
- Do more branding of RA

**8. Occupational areas of interest for RA**

- Off-shore technician
- Retrofitting
- Refinery equipment
- Mechanical integrity staff

## SUMMARY/WRAP –UP

### **John Ladd summary:**

- Apprenticeship uses a System Approach
- Have quality instructors
- Have more youth apprentices
- Apprenticeship for middle skill workers
- Up skilling the adult worker
- Rebranding of RA
- Have more communication
- RA provide better customer service
- Create tool kits
- Better technical assistance
- Provide specialized sector technical assistance

### **John Ladd asked - Why register with DOL?**

- GI Bill benefits can be used for RA
- Have a more streamlined lined process for agreements in place now for employer and start the GI benefits on the front end at beginning of registration

## APPENDIX C: Healthcare, June 6, 2014

### I. Discussion Questions

#### 1. What are your key talent challenges?

- Significant education gap for entry level workers
- Need workers to be ready for the job on Day One
- How to get wrap-around support service costs covered
- Advancing entry-level workers
- Baby boomer retirements
- Recruiting in public health nursing
- Educators not training students for current healthcare jobs

#### 2. Opportunities for the RA system

- Expand pre-apprenticeship and align it with healthcare employers' needs
- Expand career and technical education curricula
- Address cultural competencies – very important in healthcare
- Expand opportunities in the Veterans Administration healthcare system
- Recruit veterans for RA, where they have served in healthcare in military – ex. Wounded Warriors/VA
- Expand RA into nursing specialty areas
- Could RA support the Affordable Care Act requirement that cost savings have to be identified and documented?
- Would like to see ROI for RA – data really important in healthcare so use it to help sell RA to additional healthcare employers
- RA should engage with state licensing boards
- Develop an active community of practice
- Develop externships for high school instructors to promote youth interest in RA

#### 3. Challenges in using RA

- All partners involved have to be willing to make investments
- Need comprehensive approach – working with HHS and CMS regarding reimbursement and supporting staff development costs
- Experienced staff cannot spare the time to mentor journey workers
- Low reimbursement rates of Medicare and Medicaid
- Build in more flexibility into the RA model
- The industry has traditionally focused on quality; now also focus on value (e.g., lowering costs). The cost of a unit of service is the number of nursing hours per day

#### 4. Successful Models

- OA should spotlight successful models
- Opportunity New Jersey/Business Solutions
- VT HI TECH model – technical instructor trains existing staff at employer’s site

#### 5. Potential RA Occupations

- Post-acute care
- Direct support workers
- Patient care technicians
- Healthcare management

## APPENDIX D: Information & Communications Technology, June 27, 2014

### I. Leadership Opening Remarks and High-level Overview of Registered Apprenticeship (RA)

- **James Jones**, Mid-Pacific ICT Center-City College of San Francisco: ICT is an industry in itself as well as a career field that spans across just about every industry sector.

### II. What are the talent and recruitment issue that keeps you up at night?

- Can't hire experienced instructors to teach IT courses because of lower pay at colleges
- What does a degree mean as far as hiring a worker? Tech industry needs to rethink this and look at levels below a Bachelor's degree.
- Mix of new-hire trainees and incumbents - staying relevant
- Experience / lack of experience conundrum
- Diminishing levels of entry-level jobs
- The skills gap to fill lower-rung jobs
- The next gen of students - need to reach the energy of them
- Tech companies need to make the tools that connect those kids
- Schools so hungry for curriculum, capacity
- Connecting dots
- Keeping pace of the training to the software developments and engineering innovation
- Mission College aim to develop academies that support the big companies - yet can't attract the college faculty
- It is no longer about the resume; it's the portfolio & too many openings without an actual pipeline (apprenticeship won't solve alone)
- Ability to train people - but after doing that a lack of opportunities in the market
- Asia's 5-year plan - planned price war to break up offshore talent by paying more to those people.
- **Ross Brunson, Linux Professional Institute:** There are skilled job candidates in the field of IT; however, the lack of depth and breadth of knowledge is a problem and it can be difficult to get people trained to the levels needed.
- **Charlie Verboom, Lawrence Berkeley Labs:** Seeing a reduction in opportunities for entry-level jobs. Former entry-level functions can help. Desk jobs are becoming commoditized and it is a challenge to find entry level positions where apprenticeships could make sense to start. It is more difficult to get an entry level position as they become fewer. Yet, there are also not enough highly-skilled people for higher positions demanding greater knowledge and skill levels.
- **Shoba Trivadi, Palo Alto Networks: Important to outreach to students.** Today's students are smart and sharp but there is not enough awareness of opportunities in IT. She is concerned about how to get young people trained in the company's technologies as well as future ones. Are we prepared to meet the student of tomorrow?

- **Christina Gagnier, Job Scout:** Schools are hungry for support and resources for career readiness and pathways in this field and others that have been cut severely. If you approach schools, they would welcome you. Exploring and developing private/public partnerships is important. Youth may use technology but a lot of younger people cannot effectively look do online job applications since this was not learned in school. Also, people 35 and older are missed. She made the point that lots of women in their 50's are picking up coding skills and will stick around a company.
- **Stan Jackson, formerly with Dealer.com and part of VT-HITEC:** Shared his experience as an IT apprentice and how it helped the company take control in preparing the workforce with the skills needed for the company. Company has a lot of proprietary software and apprenticeship worked well. It was a burden to take on training but the big benefit was the apprentices became very loyal to the business and stayed on to become top performers. Mentoring resources were an important part. The Registered Apprenticeship program and model helped successfully grow the company from 50 to 700-800 employees – many of whom participated in the program and helped fuel growth.
- **Paul Krueger, NetApp:** Issue of ensuring training keeps pace with innovation and work. It is important to teach individual customers what they need to know or they are losing ground. Want to make sure what we are providing them is adding value. We need to make sure curriculum is in alignment to changes in the job.
- **Rob Gamble, Mission College:** College is working with companies like Palo Alto Networks, Citrix, and NetApp to establish academies; however, a big problem is finding instructors. Faculty are needed and are hard to find. Potential instructors can go to larger tech firms across the street and get paid much more.
- **Sandy Dochen, IBM:** It would be great to get cool engineers to teach a class, but they have deadlines and problems to troubleshoot. That is the challenge. Time is short and budgets are tight.
- **Alex Tam, txt2wrk:** It's all about people having a portfolio and demonstrating their skills and craft. For their internships, it's a balance to have them be productive and also giving them something to walk away with to demonstrate their skills.
- **James Jones, Mid-Pacific ICT Center-City College of San Francisco:** Scale of this problem is big. By 2020, half of STEM jobs will be in ICT - 1.4 million workers needed and education will provide only 400,000. Doubling apprenticeships isn't going to touch this problem. How do we come together? Need to scale.
- **Suleman Tejani, staffing company from GA:** Gap between what employers are asking and what the market offers. It's not that people can't be trained, but employers are looking for mid to senior level experience. Challenge is a lot of people have little industry background.
- **Ross Brunson, Linux Professional Institute:** China is looking to absorb offshore locations and associated talent so we will lose that. (Rick Maher– we are in a talent war and we are being outspent by other countries.)

- **Deborah Boisvert, BATEC National Center for Computing and Technologies:** Have looked at data to identify skills and identified stackable credentials. We have had to get past the idea that a Bachelor's degree is the entry point. When we look at skill sets needed, students can see a better price point to get a community/technical college credential and then we help develop them. Raytheon is now hiring people with Associate's degrees...other countries have that mindset.

### III. In this sector, what are the recruitment draws that can bring talent to your industry – your unique selling point?

- **Steve Weltman, Absolute Network Solutions:** Heavily invested in social services agencies. Senior person goes out with a junior person to mentor and own and learn the process and in establishing relationships with clients.
- **Dan Myers, Citrix:** This is an exciting dynamic industry with really good, high-paying jobs that people can feel proud of. Always changing.
- **Sandy Dochen, IBM:** Ability to change the world and give something back. It can be where the head and heart coming together.

Build software for doctors. Building high caliber leadership team and work and learn from this high performing industry.

- **Melinda Anderson, Microsoft:** Community giving program and helping youth. People can teach computer science in the morning and go to work in the afternoon.
- **Ross Brunson, Linux Professional Institute:** 10% thing a lot. Skills with server will last and never have to talk with users again.
- **Sandy Dochen, IBM:** Registered apprenticeship can mean five year, unions, IBEW model, more paperwork, and all that. What does registered mean in this context of "registered apprenticeship"? (Question to John, to which he responded)

### IV. Industry's needs – what are your current and future talent needs?

- **Van Tom-Quinlivan, California Community Colleges:** Some companies are looking for specific programming skills (Ruby, for example) and not necessarily looking for a resume but instead a portfolio showing a demonstrated skill set. Assuming some have the right technical skills set, they can continue deeply. Mid-career people need to apply the technology to business processes. How to take and scale that technology via a sales channel.
- **Melinda Anderson, Microsoft:** Need diversity. If recruiting from top three percent, the access pool to get them to that level is not equitable. How do we get young people? They have talent but not the access.
- **Jennifer Riggs, California Emerging Technology Fund:** Same diversity issue concern.
- **Mike Jennings, LinkedIn:** Skill gap in Java engineering, networking, and storage. Talent is hard to find.

- **Sandy Dochen**, IBM: Data analytics. Helping to set up courses at colleges.
- **Jay Banfield**, YearUp: Cybersecurity, quality assurance and testing.
- **Steve Parker**, Energysec: Cybersecurity for energy companies. Cybersecurity professionals are more in demand as utilities are looking for security professionals. Demand for these positions in electricity, oil, gas, transportation industries; IT and energy overlap here.
- **Shoba Trivadi**, Palo Alto Networks: Cybersecurity. Lots of needs in schools for educational materials in this area. Security is key.
- **Dan Myers**, Citrix: Cloud; this encompasses so many things. It's everything and need for all of it.
- **Dave Nelson**, VMware Academic Program: Echo importance of cloud computing. This really involves virtualization, networking, and storage. In the past, someone with a networking background could do it, but now is not the case. Working with Pearson in the UK for an apprenticeship program on this to spread across Europe. Focus really needs to be around three pillars of cloud computing.
- **Matthew Gamage**, Precise Solutions: Health care IT medical transcription and coding. Lots of challenges in getting candidates with IT and industry specific healthcare product knowledge. Need to find people with technical savvy and with medical coding.
- **James Jones**, Mid-Pacific ICT Center-City College of San Francisco: Look at the data and the need is vast and diverse with about half of CA companies already report difficulty in finding talent.
- **Charlie Verboom**, Lawrence Berkeley Labs: How to integrate with cloud systems. How to use those tools to reach out to SAS and cloud providers. Tough skill to fill.

#### V. What are your talent strategies today?

- **Shoba Trivadi**, Palo Alto Networks: Internships run through the HR Dept. Looking at minimum Bachelor's degrees.
- **Mike Jennings**, LinkedIn: College internships, since it is the first source of new hires. Very competitive. Put in a lot of funding with 300 interns at LinkedIn this summer.
- **Charlie Verboom**, Lawrence Berkeley Labs: Relationship with community colleges to hold intern program where they start at the help desk. Program has had 80 college interns where they get college credit while working about 20 hours a week.
- **Aaron Chrisco**, Salesforce.com: Conduct internships via university recruiting. Also, some internships with high schools to provide industry exposure to students. In addition, working with Year Up and providing internships in that program.
- **Charlie Manglardi**, Year Up: The Year Up program has many characteristics like apprenticeship. Year Up works with many companies who may not be good at training themselves. Year Up can play a middle man role.
- **Nickolas Xenos**, Juniper Networks: There are different levels of talent that need to come into these different sectors. There is an intern program that is starting to grow as well as a new college grad program. How do we develop the talent in the academic sector so they are

ready to do what they need to do at the level needed? Concern in IT that there is a revolving door of talent. If employers are asked to invest in the future, there is nothing to say the person is not going to just take all of this investment next door.

- **Mike Jennings**, LinkedIn: Revolving door issue is real, but there should be a way to give back as well.
- **Shoba Trivadi**, Palo Alto Networks: Co-op program where they can get trained and paid.
- **Van Tom-Quinlivan**, California Community Colleges: The PGE PowerPathway program established a way to get better positioned candidates. The company focused on what they would hire against, the workforce system did outreach and screening in the community, and then the community colleges provided customized training. This created a reliable talent pipeline. It was an intentional design and involving the braiding together of funding from these three partners.
- **Caroline Devinck, Accenture**: Have a traditional strategy but also do internship and explore alternative sources of talent within organizations. Working with Year Up and others and where it makes sense to fit them in our company.
- **James Jones**, Mid-Pacific ICT Center-City College of San Francisco: Companies are raising the prices being paid for talent and often poach from each other while not growing the workforce from within the country and importing from outside (H-1B).
- **Alex Tam**, txt2wrk: First job may be in the call center, but also provide access to community training like BAYVAC and finding mentorships with non-profits. People also find senior mentors within the organization and help train them to other higher-level jobs.

## VI. What can we do to accelerate Registered Apprenticeship and meet your business's needs?

- **Sandy Dochen**, IBM: IBM has worked on a PTECH model in New York high schools and now is spreading to Chicago and Connecticut. Helped with principal selection, looked at skills and identified additional courses to be taught and provides e-mentors. Model does take some overhead and resources, but is something that could be expanded.
- **Aaron Chrisco**, Salesforce.com: Big challenge is cost (\$20,000 per intern) and associated risk. If cost is could be reduced to just \$5,000, that would be great. If some funding is available for that, that would be great.
- **Gerry Ghazi**, Vermont HITEC, Inc.: Established Registered Apprenticeship programs in health care, advanced manufacturing, and IT. IT crosses over both industries and more. Registered Apprenticeship with GE Healthcare for 38 high-level positions. Helped Dealer.Com grow from 60 to over 700 employees. Use a pre-apprenticeship to Registered Apprenticeship model. Pre-apprenticeship portion is 8-10 weeks where people are immersed in the employer's technology and context. If they successfully complete, they get a job and go into a Registered Apprenticeship program. Grant funds are used to pay for pre-apprenticeship portion. The employers sets graduation standards and the instructor will reverse engineer the curriculum to deliver what employer needs. ROI can be achieved by adopting a

graduated wage scale and using the difference to invest in classroom training. This model is an investment in developing raw talent that works.

- **Rob Gamble**, Mission College: Let people know it is not plumbers, front loaded idea. Based on discussion, maybe 70-80% of the way to apprenticeship in some cases.

## VII. What do you need to help you to go to the next step? How could RA be applied to our business?

- **Charlie Verboom**, Lawrence Berkeley Labs: Need to find a way to scale. Bay Area Community College Consortium needs to be able to connect with the employers. If most jobs are small business, then need to connect with them.
- **Darlene Sloan**, Alameda County Social Services: Have subsidized employment programs and always looking for ways to collaborate. Want to work with labor and community colleges in order to train and funnel their candidates.
- **Sandy Dochen**, IBM: Would there be a requirement for a LWIB, colleges, non-profits, how to sort through that? Would it involve a school district, or could be a youth collaborative? What's the target? If HR departments are not used to government, how do they work with 50 different organizations? In NY, there is PTECH but not in Austin.
- **Matt Gamage**, Precise Solutions: A high-tech Registered Apprenticeship graduate in software engineering. Challenge is the stigma that apprenticeship is just for plumbers, mechanics, roofing, etc. Need to have more people who can evangelize the program and network of larger organizations who can talk about these discussions in order to change the overall feeling about registered apprenticeship.
- **Aaron Chrisco**, Salesforce.com: See it as investing in human capital. Difficult to work as an intern/apprentice and make a living. Subsidizing some costs would help people.
- **Christine Gagnier**, JobScout: Concerned that funding will go to dinosaur players who don't get results. Will the \$100 million investment be an RFP or grant?
- **Deborah Boisvert**, BATEC National Center for Computing and Technologies: Resource mapping to help braiding of funding. Also, look to do more data-driven decision making.
- **Patricia Dombrowski**, Bellevue College, WA: Really productive but starting from the ground up. How about an apprenticeship accelerator? Coaches with knowledge and expertise who could help with answers.
- **Shoba Trivadi**, Palo Alto Networks: Rewarding those colleges and companies that are helping train apprentices would be nice. Performance-based....responsibility and checks and balances to make sure the program performs, doesn't take advantage of apprentices and is credible.
- **James Jones**, Mid-Pacific ICT Center-City College of San Francisco: Would like to see DOL understand scale and urgency of the problem. This is an emergency. Scale of need is extensive. Consider this when allocating funding. Consider investment in public relations and advocacy to promote better understanding.

- **Alex Tam**, txt2wrk: Analytical problem-solving skills are needed. Technologies and tools change, so rapidly – industry needs a way to connect to the education systems. Maybe it is community colleges and maybe it is community programs.
- **John Ladd: summary**
  - IT doesn't have an image problem but RA does
  - How to find instructors; having relevant curriculum
  - Many strategies for finding talent are not working or pools are drying up.  
Companies willing to build own pipeline
  - Need for data
  - Willingness to hire below BA level
  - What is role for intermediaries? Trying to have partnerships so they aren't burdensome to companies.
  - What are opportunities to fund? Resource mapping and braiding of funds.
  - Apprenticeship accelerators; how to get to the innovators; don't fund the dinosaurs
  - Need to scale, marketing and outreach

## APPENDIX E: Manufacturing, June 19, 2014

### I. How do you sell your program? Describe your unique selling point.

- **Pam Moore**, Detroit: They have a pipeline for workforce and use link learning. They have created a Workforce Intelligence Network to dialog between businesses and workforce. She thinks RA should be project based.
- **Steve Maccy**, M. Desel System: Use a school-to-work program with a technical path – involves 14-19 hours of work per week. Participants leave the program with a two-year degree. They begin at the junior high level. Work with local vocational school for CAD drafting.
- **Missouri Dept. of Economic Development**: Human capital is an investment
- **Pittsburg**: Use a multi-employer apprenticeship program. The model provides job security and involves a challenging and flexible work environment.
- **United Auto Workers**: They offer diverse apprenticeships, including in geothermal work. Each apprenticeship area involves a strong relationship with community colleges. Workforce boards are also engaged in the process.
- **Vermont HI TECH Program**: Education is a main hook for students – the organization pays for pre-apprenticeship training. Trainees begin at \$10 an hour and work a 40 hour week for eight weeks. This provides 17 college credits. Will pay full time for nine weeks of training. The program is in high demand; 16 job openings resulted in 400 applications.
- **Mechanical Installation**: Have a tech use program. Youth and the school system are engaged. Long-term opportunities available with RA.

### II. What are your concerns and challenges regarding RA?

- **Chicago Workforce Partnership**: The skills gap. Employers are unwilling to hire people who aren't working. Have to balance experienced employees with those with no experience.
- **Pam Moore**:
  - Need to get employers inside schools – facilitate the discussion between businesses and K-12 education systems
  - Build and facilitate career pathways from high school
  - Apprenticeships should be stackable
  - Need better outreach and enrollment mechanisms
- **Missouri Department of Economic Development**:
  - Specific challenges in recruitment include a lack of people in the skilled trades and a lack of women into the pipeline of manufacturing
    - Need to change image of manufacturing to boost recruitment
    - Enhancing image of manufacturing should be done at the federal level
    - Better advertising is needed

- **State of Wisconsin:** The average age of skilled workers in the state is 59 years old. As skilled workers retire, the companies lose their institutional knowledge.
- **Pittsburg:**
  - The area has a shortage of applicants for apprenticeship – not enough interest on the part of youth.
  - There is also a lack of experienced staff to train apprentices
  - Challenges with quality of work ethic
- **Vermont HI TECH:** Challenges finding the right person for the job and having necessary knowledge, skills and abilities in the labor pool
- **Iverson Company:** Retention is a concern and better image and branding of RA is needed
- **Volkswagen:** Applicants often not prepared for interviews, and challenges finding the right candidates
- **Bis. Engineering:**
  - Skills for talent pipeline
  - Scalability
  - Partnerships important for talent pipeline
  - Credentials should be aligned with manufacturers' needs
  - Legacy
- **Mike Brown – Siemens:** Challenges include:
  - Aging workforce
  - Bringing in young talent
  - Balancing long-term investment vs. short-term profits
  - Need more dialogue between government, non-profits and education stakeholders
  - Company HR not familiar with WIA workforce boards

Apprenticeships create change in the role of businesses because companies are drawn into creating a supply of labor. There is a need for companies to become familiar with workforce development language, and for dialogue around business needs with workforce partners. Apprenticeship offers the opportunity to merge the needs and goals of the two parties.

- **UAW:** Upon completion of an apprenticeship, the company worries about losing the talent. Retaining apprentice following completion is a challenge.

#### **Other challenges noted by the group:**

- Updated/current facility
- Transient population moves away
- Retention of trained workers
- Need for connection and intersection between public policy and business goals
- Need a labor pool that understands the machines used in the industry
- Substance abuse
- Need for upskilling current workforce

- Improve the image of manufacturing and skilled trades
- Foster diversity within manufacturing
- Potential employees need stronger soft skills (communication, team work, conflict resolution, flexibility, attendance, work ethic)

### III. What are your talent needs?

- **Pam Moore:**
  - Skilled tradespeople for bridge work in Detroit
  - Welders
  - Soft skills
  - Pre-apprenticeships
  - Resources
- **Toyota of North America:**
  - Multi-craft/fabrication
  - Mechanics
  - Soft skills
- **Other talent needs noted by the group:**
  - Construction trades
  - Dye makers
  - Electricians to electronics, including robotics
  - CNC machinist
  - Pipeline of quality workers (GM noted that 35% of employees qualify for retirement)

#### IV. What are the skills gaps?

- **Siemens:**
  - Awareness of lean culture (innovation, flexibility)
  - Creativity – ability to come up with ideas
  
- **UAW:**
  - Need standardized test for apprenticeship that apprentices can pass
  - Disappearance of trade schools
  
- **Other gaps:**
  - IT skill sets

#### V. Describe a good talent strategy

- **German-American Chamber of Commerce:**
  - Build relationship between student and company
  - Raise the bar on capability
  - Market job opportunities
  
- **MortonSol:**
  - Start as early as kindergarten to expose youth to apprenticeships
  - Children’s books should depict female workers
  - Create games that match skills with apprenticeships
  - Create brochures that appeal to children; make the strategy personal and appealing
  
- **Toyota:**
  - Create career pathways through work-study programs, grades 5 – 12
  - RA should be utilized, up-scaled and should share best practices
  - Partner with community colleges using industry-led models
  - Develop two-year tech programs resulting in an Associate’s degree in engineering, Manufacturing, Business. Enrollees would be full time students and work three days a week at the company. In five semesters, program could be completed. Should include safety, lean manufacturing and equipment management.

- **Group:**
  - Create pre-apprenticeship programs and encourage students who complete it to continue in the company in an RA

## VI. How can apprenticeships be accelerated?

- **Volkswagen:**
  - Reduce costs to business
  - Make it mandatory for high school students to do apprenticeship/internship
  - Lower cost of education
  
- **Siemens:**
  - More funding directly to private sector
  - Lower the financial impact of apprenticeships on businesses
  - Help businesses ensure a return on investment
  - Make HR aware of WIA resources/workforce development programs
  
- **State of Illinois:**
  - WIA and employer consortiums
  - Marketing
  - Learn and earn environment in manufacturing
  - Scaling up to getting BA degrees
  - Reimage RA – better branding and outreach
  - Remove stigma regarding apprenticeship
  - Create image of dignity in blue collar jobs – honorable professions
  
- **Other Group Input:**
  - Closer integration between workforce and business HR departments. By show of hands, only employer in the roundtable knew of WIA and workforce programs.
  - Create small business consortia
  - Create national and/or local manufacturing open houses so community can see work environment first-hand
  - Create industry cluster groups
  - Create pipeline from school to RA
  - Businesses that sponsor RA should include RA data in their annual reports
  - Capitalize on training costs in balance sheets – RA should be considered an investment in the future

- Offer tax credits or other incentives to companies
- Engage “apprentice-like” programs. Find out what keeps them from becoming official RA sponsors
- Reduce federal bureaucracy – reduce burdensome tracking and focus on programs rather than on counting outcomes

## VII. What can ETA do to help?

- Create apprenticeship matching
- Help with financial cost
- Share best practice information
- Help with branding
- Facilitate/create pipelines
- Reduce bureaucracy (record-keeping and paperwork)
- Establish an RA recruitment campaign
- Policy-related instruction for apprenticeship available to community colleges
- White papers with Education
- Partnership agreements
- Ensure that apprenticeship related instruction is articulated to college degrees
- Apprentice-instructor ratio

## APPENDIX F: Transportation/Logistics, June 4, 2014

### I. Leadership Opening Remarks and High-level Overview of Registered Apprenticeship (RA)

- **Stephen Jones and Mike Johnson of UPS**, the session host, welcomed participants. They noted that UPS is one of the largest companies using Registered Apprenticeship in the country. UPS has 10 years' experience with RA; they currently have two apprenticeship sites and are adding five more around the country for training UPS drivers. Stephen Jones thanked John Ladd, OA Director, for OA's support over the years.
- **Bryna Helfer**, U.S. Department of Transportation, said that DOT and OA have been working together recently. She indicated that, in the business of moving people and moving freight, workforce training is always a critical element. DOT is working closely with the Departments of Education and Labor to identify industry demand and the skills and credentials needed for jobs within the industry. Having pathways for developing this expertise and job-driven training partnerships are important solutions. Ms. Helfer also discussed the Grow America Act, through which the federal Department of Transportation will invest \$120 million over 10 years in transportation and expand the federal transit workforce. States that leverage partnerships and commit to local hiring practices will have an edge when funds are awarded.

Two ACA members, John Mason with the Seafarers International Union and Stephen Jones with UPS, described their organizations' partnership with Registered Apprenticeship.

- **John Mason** indicated the Seafarers Union has a very successful relationship with OA dating back 13 years. They recruit workers in all 50 states, and have training facilities in Maryland and Hawaii. The industry needs enough recruits to fill places on ships, but these jobs require skills and documented credentials. Mr. Mason noted the overall importance of the Registered Apprenticeship credential and the opportunities for advancement that RA provides. He stated that these are good jobs where journey-level workers can earn \$60,000 – 70,000 after completing their apprenticeship program.
- **Stephen Jones** discussed UPS' workload and staffing needs – they deliver 16,000,000 packages worldwide and have 86,000 drivers and 16,000 feeder drivers on the road every day. He indicated that drivers are represented by the Teamsters and that the union helped to implement the RA program in UPS. UPS's RA efforts are considered to be a non-traditional field for RA. UPS has recently signed a new agreement with DOL, committing to hiring 50,000 veterans and to gain additional GI benefits for RA participants.

Following these presentations, ETA Regional Administrator Les Range and OA Director John Ladd provided an overview of Registered Apprenticeship and the process for the discussion.

Dr. Helen Parker, Maher & Maher, led the discussion.

## II. Discussion Questions

### 1. Industry's needs – what are your skilled talent needs?

- **Cindy Amos – TIA:** The biggest need is skilled salespeople. One of the Association's members is working with community colleges to develop soft skills instruction, but new hires still need sales skills. She indicated it can take from three months to a year to develop these skills on the job.
- **Laurie Denham – American Society of Transportation and Logistics:** Soft skills are definitely needed, especially how to present yourself. Additionally, critical thinking skills are vital. She observed that it is sometimes easier to instill these skills in young people with a high school education than some with college degrees.
- **Steven Markham – BLG Logistics, Inc.:** Their recruiting challenge is finding individuals with quality soft skills. This needs to be the starting point, and it gets expensive when the company's investment in training is lost because the worker leaves.
- **Mark Dysart – Transportation Learning Center:** The organization assists training agencies involved with apprenticeship. However, all the money provided to their companies flows to capital improvements; none is allocated for training. The RA system needs to show the return on investment to help businesses understand why this is a valuable training approach. He also advocated for closer coordination between RA and ETA.
- **John Buckner – SEPTA:** Mr. Buckner indicated they are the largest transportation agency in Philadelphia, PA and have partnerships with the Transportation Learning Center. He noted that some funding can be used for education. SEPTA addresses funding challenges by helping the smaller transportation companies to arrange training, as the smaller outfits cannot afford to do so on their own.
- **Stephen Jones – UPS:** The transportation industry is facing a talent shortage that will only grow over time. This is the top growing industry in the country and the jobs cannot be outsourced. For example, UPS will need to hire 117,000 driver positions – this year alone.
- Registered Apprenticeship is one tool, but additional solutions are needed. Companies need to identify their skill needs. They also need to determine whether to build (RA) or buy (higher wages) talent. While it is a fast-growing industry, the jobs do not necessarily attract workers. Transportation companies have to continue to figure out how to source talent.

- **Steven Markham:** The industry needs to match unemployed and underemployed individuals to Registered Apprenticeship opportunities. How can the industry effectively engage them?
- **Bryna Helfer – U.S. Department of Transportation:** What hard skills does the transportation industry need? Seems valuable to expose youth to STEM fields at younger ages and to help them see the value of working in the transportation industry.
- **Liv Harrison – Senator International:** What is missing on the talent side is expertise in logistics and supply chain. It can be very helpful for new hires to work in a variety of positions so they understand the overall process and how logistics contributes to it.

At some early age, people have to decide whether to go to college or to find a job. Registered Apprenticeship can be very flexible plus you are earning money while you are learning. You can always go to university later. Registered Apprenticeship builds stronger loyalty and investment by employees, because they see the big picture of the organization's operation and they are aware of broader opportunities that lie ahead. She also noted that in Germany, eighth to ninth graders are exposed to information explaining various occupations and how apprenticeship can fuel career success.

- **Roger Griggs – G&P Trucking Company:** How do you encourage your child to become a trucker? Their company has lots of applicants but it is a complex process to break into, especially with today's stringent insurance rules (e.g. cannot have violation points on license). Working with Apprenticeship Carolina has helped the company to meet its talent needs.
- **Rob Hatchett – Covenant Transport:** e-Commerce is generating huge transportation needs. This should help the image of the industry.
- **Rob Brawner – Atlanta Beltline, Inc.:** Soft skills are the biggest challenge the Beltline has in its partnership with Grady Hospital to develop healthcare positions. These traits cannot be certified but need to be taught for individuals that don't currently possess them. The employer has been very involved with the training process and it is proving highly successful for the few individuals that have made it through training.
- **Charles Moss – FEDEX:** It depends on the skills sets needed whether youth should decide to go to college or to work after high school. The image of the transportation industry needs to be enhanced. Recently it has gotten more visibility and credibility but there is a lot of work yet to be done to attract enough young people to the industry.
- **Joe Jenkins – OA:** Asked how many of the employers have looked at their human resources needs for the next two to five to ten years?
- **Barbara Murray – The Southeast Maritime & Transportation ATE Center** indicated that this done. Ms. Murray noted that this is especially important in light of the number of retiring baby boomers. She reiterated the recommendation that teachers and counselors need to be educated about industries and apprenticeships. To reach young people, YouTube videos would be the way to go.

- **Carla Whitlock** – Apprenticeship Carolina said that the South Carolina apprenticeship office works with community colleges and industry to hold workforce opportunity summits. These meetings are a chance to bring everyone (e.g. employers, educators, workforce partners) to the table to discuss the industry’s skills needs for the next five to seven years. This helps to shape future curriculum at the community colleges.
- **Roger Griggs:** G&P’s success in staying fully staffed has been their RA training program. They work closely with the community colleges (in South Carolina) for related instruction. They also have a VA training program. Today’s driver wants high wages and lots of “home time,” so the company tries to get drivers home on weekends. They are now doing more to promote home time through strategic route mapping.
- Mr. Griggs indicated that G&P’s biggest workforce challenge is driver retention. They train driver managers weekly so they will provide quality instruction to new employees.
- **John Buckner:** The commuter rail industry is facing serious talent shortages, with significant expansion and increased number of retirements in the next five years. From 30 – 80% of the industry’s workforce will need to be replaced in the next ten years. It will be a huge challenge to find the number of new employees that will be needed. He noted that the occupations in this field are all appropriate for apprenticeship and all are highly technical areas, involving electronics and sophisticated computer operations.
- **Sheryl Stone – Director, DeKalb Workforce:** The money is there to provide OJTs and apprenticeships. However, workforce staff doesn’t understand apprenticeship opportunities or the industries’ needs. Can OJT and RA be married to become a less cumbersome process? The workforce system wants to leverage resources to help and to minimize employer paperwork.
- **Mark Hannon-White – Atlanta Regional Commission Workforce:** It is always a challenge to see how WIA and apprenticeship fit together. There needs to be more communication and some flexibility to ensure that if WIA dollars are used for apprenticeship, quality WIA outcomes will result.

## 2. What are the opportunities for RA to meet some of your needs for skilled talent?

- More positive publicity about these occupations is needed.

## 3. What are the challenges to utilizing RA to build your talent pipeline?

- **Helen Parker (Facilitator):** Noted that a broad group of stakeholders needs to come together to figure out how to leverage resources and help industries and workers succeed. This group would include the industry representatives, technical colleges, secondary schools, workforce staff and intermediary groups. Who would convene such an endeavor? Helen noted that the ETA Regional Office staff could help convene these discussions.

Joint labor management models were suggested as a way to bring together employers within an industry. This could promote efficiency and greater portability of credentials for apprentices.

- **Cindy Amos – TIA:** Suggested that TIA could convene this type of effort, as they currently do this for their members. They offer entry-level training and broker training for member companies.
- **Barbara Murray:** Need to develop the right linkages within each state. The challenge is that the transportation industry is, by nature, very spread out. How can you bring companies together and recognize one RA training curriculum regardless of location?
- **Carla Whitlock:** Apprenticeship Carolina encourages companies to jointly establish basic competencies for the industry and then customize for company-specific needs on top of the basics.

**4. What are some of the innovative solutions that could be expanded and replicated? Please tell us more about your experience:**

- **Steven Markham:** They use an apprenticeship model for their entry-level warehouse employees. They (located in Alabama) partner with local high schools to provide a program with five hours of classroom instruction and five hours of onsite training per week for one year. Due to the program's success, the state of Alabama is expanding this pilot to engage additional high schools. Mr. Markham noted that, like math, reading and communication, logistics is a fundamental skill.
- **Laurie Denham:** Florida has workforce academies, in which transportation, logistics, warehousing, supply chain, safety and office skills are among the fields available. Key industries provide the academies with the critical skills needed from which to develop curriculum. They have high school classroom and internship models; completers receive 12 hours of college credit.
- **Barbara Murray:** They received a grant from U.S. Department of Labor more than 10 years ago to develop credit courses that build logistics skills. A consortium of maritime companies designed the curriculum; the state is now funding the college to expand this program. College credits are received for this related instruction.
- **Carla Whitlock:** South Carolina has worked hard to encourage partnerships between industry and community colleges for related instruction. The state tax credit (\$1,000 for each apprentice) helps offset the company's training costs. Trainees can also receive lottery-funded tuition assistance to help pay for training, and WIA is a partner in the effort. Leveraging all these sources really helps to contain training costs for all parties.
- **Tom Schoemann – University of Southern Mississippi:** The University has a Family Outreach Night for fourth to sixth graders and their parents, exposing them to different occupational areas.
- **Rob Hatchett:** CSA has developed a safety tracking system. Covenant Transport has an OJT program and is conducting outreach to attract veterans. They hoped this would

reduce turnover but it hasn't made a difference. Safety has improved among those employees that remain, however.

- **Bryna Helfer** said she would be interested in seeing this data; the agency has really pushed helping veterans succeed in the industry and wants to collect success stories.
- **Mark Hannon-White:** With the Go Build project in Douglas County, they found that parents don't know about current manufacturing processes and the quality jobs they can offer. They took high school kids, counselors and parents on a field trip to the KIA plant. It was an "aha" moment for many of the parents.
- **Sonya Lovelady – Atlanta OA Office:** They conducted an event at Decatur High School. It was very informative and valuable for the parents and students that attended.
- **John Buckner:** described a situation in which they had to provide in-house elevator/escalator maintenance at their transportation facility. They had trouble getting the union on board to develop training, so they brought together a consortium of businesses from across the country and they are developing an RA program to develop these skills. It is a public/private partnership.

He also indicated that 20 agencies are involved in a signal switching RA program. Each company is contributing a small amount of funding to leverage resources for success.

- **Bryna Helfer:** Federal DOT is partnering with DOL on a logistics model. Additionally, they are co-sponsoring a webinar on Friday, June 13 with Jobs for the Future to examine geospatial numbers for transportation demand. She will give John Ladd the information to share with today's participants.

Ms. Helfer also suggested that the transportation reauthorization bill could be shaped to include more money for training, with incentives for RA training. The group endorsed this approach.

She additionally offered the possibility of better cross-training between ETA and DOT. This was also endorsed by the group.

- **Carla Whitlock:** One of South Carolina's House members has introduced a federal tax credit bill, similar to the bill that SC currently has.

## 5. What services would you value to support your talent development strategies?

- **Barbara Murray:** College credit enhances the image of RA. Provide apprentices with hands-on training up front so employees concerned about going to college will have some work experience and feel better about college participation. She noted that aligned and stackable credentials have been very beneficial for RA. At the same time, standardization is needed. Within an industry, establish common fundamentals and vary the length of related instruction based on companies' needs. This makes it fairer for all going through programs.

John Ladd indicated that there are national guideline standards, but perhaps more is needed in this regard.

**6. The Department is poised to make a significant investment in expanding RA programs nationwide, via a competitive SGA. What support would you need/how can we assist you?**

- **Robert Benson** - Hartsfield-Jackson Airport: Will matching funds be required for these grants?
- **John Mason:** How can the transportation industry tap into some of the grant funds? One suggestion for its use would be PR materials for parents, or enticing veterans into the industry. The industry should think strategically to position themselves for some of these funds.

**What will the criteria be for the grants? John Ladd asked participants what criteria they would like to see.**

**7. What kind of commitment might you be able to make today? How can OA staff support you in pursuing that commitment? What else do you need from OA to enable your engagement?**

- **John Ladd:** OA wants your feedback and input on the session. Are participants willing to make a commitment or to take that first step or some action to move forward? He talked about the various levels of commitment or engagement and offered the opportunity for participants to talk with OA representatives. He also mentioned developing a leadership group and to find a candidate to provide sector leadership and outreach with other employers in the industry. Mr. Ladd also mentioned that a subsequent meeting could be held to continue the discussion.
- **Bryna Helfer:** Would such a meeting be cross-modal or specific to industry subsectors? One option would be a combined group with break-out sessions during the meeting. There was support for a meeting early in the fall with some industry-wide issues and some targeted issues.
- **Barbara Murray:** Suggested using the National Transportation Summit 2012 as a model, perhaps as a transportation workforce summit.

## SUMMARY/WRAP –UP

- The transportation and logistics industries have significant talent needs at all levels. There are plenty of opportunities for RA to play a role.
- Image is a barrier to attracting talent in this industry.
- The upcoming SGA should instruct respondents to provide a clear definition of need.
- RA paperwork needs to be streamlined.
- Encourage economies of scale and efficiencies
- Encourage and support employer consortia
- Youth apprenticeship models are successful – it is valuable to reach kids early.
- Ensure related instruction is articulated to college credit wherever possible
- Better promotion and education are needed around how to attract workers to the industry and to RA
- A number of success stories were shared regarding leveraging resources.
- The vital nature of pre-apprenticeship and soft skills. Individuals need additional preparation, in many instances, before moving into work-based learning models.
- The value of public/private partnerships – everyone is stronger when realizing that we are all in it together.
- College vs. apprenticeship – they are not necessarily mutually exclusive. A “Gap Year” could be devoted to beginning an RA.
- High schools push students to go to college. This makes it difficult to promote apprenticeship. The message needs to be delivered that all post-secondary training is valuable.
- The system can do more to provide success stories to the public and stakeholders.
- DOT is committed to helping convene interested employers and other stakeholders. An industry-level group – with subsector break outs – is a possible approach.