## Working Group Members

*Main BDAC Members*

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
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<tbody>
<tr>
<td>1</td>
<td>Leticia Latino* (Chair)</td>
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<tr>
<td>2</td>
<td>Rikin Thakker* (Vice Chair)</td>
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<td>3</td>
<td>Nayef Abu-Ageel</td>
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<td>4</td>
<td>Miranda Allen</td>
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<td>5</td>
<td>Earl Buford</td>
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<td>6</td>
<td>Kelleigh Cole*</td>
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<td>7</td>
<td>Todd Crump</td>
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<td>8</td>
<td>Robert Debroux* (Alt. Tim Ulrich)</td>
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<td>9</td>
<td>Douglas Dimitroff*</td>
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<td>10</td>
<td>Bill Esbeck</td>
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<td>11</td>
<td>Zane Farr</td>
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<td>12</td>
<td>Michael Hain*</td>
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<td>13</td>
<td>Kyle Hitchcock</td>
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<td>14</td>
<td>Donald Knife</td>
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<td>15</td>
<td>Eve Lewis*</td>
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<td>16</td>
<td>Charles McKee*</td>
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<td>17</td>
<td>Marquita Rockamore (Alt. Tondi Allen)</td>
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<td>18</td>
<td>Grant Seiffert</td>
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<td>19</td>
<td>Steve Sellenriek</td>
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<td>20</td>
<td>Dileep Srihari*</td>
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<td>21</td>
<td>Brent Skorup*</td>
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<td>22</td>
<td>Curt Stamp*</td>
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<td>23</td>
<td>Tom Struble*</td>
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<td>24</td>
<td>Larry Thompson* (Alt. Julie Darrington)</td>
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<td>25</td>
<td>Jenifer Vanek</td>
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Opening Remarks

▪ **Chair: Leticia Latino van Splunteren**  
  CEO, Neptuno USA Corp  
  llatino@neptunousa.com

▪ **Co-Chair: Rikin Thakker**  
  VP of Telecommunications and Spectrum Policy, MMTC  
  rthakker@mmtconline.org
We want to cover today

- Opening Remarks by Chair and Co-Chair
- This quarter at-a-glace
- Main Takeaways from SMEs
- Navigating Department of Labor Job Codes
- Training Programs Discovery and Evaluation
- Other relevant discussion points
- Next quarter focus
- Open floor for comments and discussion
What we have known all along is now being recognized and highlighted, our Workforce is ESSENTIAL to keep our country running.

From a Broadband Identity crisis to a unique rebranding opportunity.

Our approach will have to tackle a PRE-COVID19 and POST-COVID19 workforce challenges.
World Events:

- Coronavirus Pandemic impacting life as we know it.

- Our Working Group applauds the FCC and Chairman Pai leadership during COVID-19 Outbreak

- **CHAIRMAN PAI LAUNCHES THE KEEP AMERICANS CONNECTED PLEDGE**
  - Calls on Broadband and Telephone Service Providers to Promote Connectivity for Americans Impacted by the Disruptions Caused by the Coronavirus Pandemic

March 25 Update: **580 broadband** and telephone service providers have now taken his Keep Americans Connected Pledge, an increase of 190 from last Thursday.
This quarter at-a-glance
Workforce and Training Initiatives – Now More Than Ever

- 3 out of 5 Americans Work for Hourly Wages – Bureau of Labor Statistics
- Nearly 1 in 5 Households Have Lost Work Because Of Pandemic (March 17)
- U.S. DOL ANNOUNCES AVAILABILITY OF UP TO $100 MILLION IN NATIONAL HEALTH EMERGENCY DISLOCATED WORKER GRANTS IN RESPONSE TO COVID-19 OUTBREAK (March 18)
- A record 3.28 million workers filed claims for unemployment benefits – Five times the previous record high
- Cornell Law School’s U.S. Private Sector Job Quality Index
  - Hardest hit areas:
    - Limited- and full-service restaurants, with some 9 million jobs at risk of layoffs
    - Education have some 3.2 million jobs at risk
    - General stores have 2.8 million jobs at risk
Least affected - Manufacturing and Constructions
  - You cannot hire someone with no prior experience
  - We believe that Telecom falls in the same category

One of the challenges we identified
  - “lower unemployment rate” - workers were “hard to find”

THIS WILL CHANGE

With more workers available, will the Telecom and Broadband Deployment accelerate?
  - Proper training is required (more emphasis on hands-on, and soon)

Effect of COVID-19 on the Telecom Job Market?
  - Many unknowns
  - Will the 5G deployment continue as projected earlier?
  - If yes, given proper training, we NOW will have more workers to get the deployment work done sooner
Industry Specific

- Department of Labor awarded $6M Grant to WIA to advance Workforce Development – Remarks by Jonathan Aldenstein
- Jan 22, 2020 hearing on “The 5G Workforce and Obstacles to Broadband Deployment” Before the Committee on Commerce, Science, and Transportation United States. Commissioner Carr participated as one of the witnesses.
- Workforce Panel During Nate Unite 2020. (Three members of our working group were present). Commissioner Carr delivered a workforce development centered message.
- FCC Commissioner Geoffrey Starks hosted a roundtable discussion on Feb. 11, and convened a group from civil society, academia, and industry to orient FCC’s role in the Future of Work.
This quarter at-a-glance

Working group Specific:

▪ Job skills Group Calls – Bi-monthly (6 calls this quarter)
▪ Subgroups met via conference call at their discretion
▪ Two Subject Matter Experts Invited to speak to get deeper perspective on Apprenticeships and Credentialing:
  ▪ Deb Bennett – TIRAP Program Director, WIA
  ▪ Peter Janzow – Credly
▪ Big focus on discovering and evaluating existing Training Programs and standardizing information about them.
▪ Working Group Member Changes:
  ▪ Debbie Goldman replaced permanently by Zane Farr
  ▪ Greg Capobianco replaced by Elizabeth Cuttner
Working group Specific:

Focused mostly on:

- Organizing data gathered in report format and worked on report introduction
- Recommending steps to attract more skilled professionals (Charge 3)
- Identified and analyzed potential model training programs (Charge 4)
- Started discussions on performance metrics to gauge the effectiveness per stakeholder. (Charge 5)
- Identified the need to better understand the role of Government funding as a key component to succeeding in bridging the gap
Main Takeaways from SME’s:

- Deb Bennett- TIRAP Program Director, WIA
- TIRAP- Telecommunications Industry Apprenticeship Program

https://www.tirap.org/

- Joint venture of telecommunications companies, industry associations and the U.S. Department of Labor (DoL)
- Develops DoL-credentialed apprenticeship programs
- Partners with stakeholders to promote safety, enhance quality, and enable education and advancement opportunities in the telecom workforce that will meet network infrastructure build out needs.
- The Wireless Infrastructure Association (WIA) is the National Sponsor of TIRAP.
Main Takeaways from SME’s:

- **Current Occupations in program:**
  - Telecommunications Tower Technician
  - Wireless Technician
  - Telecommunications Tower Antenna & Line Lead
  - Telecommunications Tower Antenna & Line Foreman
  - Telecommunications Tower Construction Lead
  - Telecommunications Tower Construction Foreman
  - Maintenance & Condition Assessment Lead
  - Maintenance & Condition Assessment Foreman
  - Fiber Optic Technician
There is a substantial increase in workforce and education credentials:

- 738,000 Different types of credentials
- 370,000 Higher Education credentials
- More than 50M digital badges issued
- More than 25M digital badge earners

- Credentialing provides a standardized way of representing training and a vehicle for scalability.
- Digital credentialing goes with the worker – he/she “owns” it and it doesn’t stay behind at the training institute.
Main Takeaways from SME’s:

TYPES OF DIGITAL CREDENTIALS

**EXPERIENCE**
- Not Measured
- Unstructured Learning
  - Events/Conferences
  - Participation
  - Membership
  - Volunteering
  - Projects
  - Hackathons

**LEARNING**
- Not Measured
- Structured Learning
  - Self-Led Learning
  - Soft Skills
  - Professionalism
  - Grit
  - Competencies
  - Product Knowledge

**VALIDATION**
- Measured
- Validated Learning
  - Learning + Assessment
  - Portfolio/Evidence
  - SME Review/Peer Review
  - Field Based Assessments

**CERTIFICATION**
- Measured
- Validated Achievement
  - Industry Certifications
  - Diplomas and Degrees
  - Certificate Programs
  - Apprenticeships
  - Licenses
Navigating Standard Occupational Codes on DOL Database- Kelleigh Cole
We are studying Job and Industry Classifications (SOC and NAICS) to determine how these could be more effectively
▪ The Standard Occupation Classification (SOC) codes are used to categorize every job in the United States into one of 867 categories. These occupations are based on job duties and education and/or training.

▪ The North American Industry Classification System (NAICS) is the system used to classify businesses and track the growth of the US economy.
Things to consider:

- How SOC and NAISC codes are being used
- Limitations to these systems
- Recommendations on how they could be changed or updated
- Other statistics that track the broadband industry and workforce
- Other coding/classification systems that are being used
- Started Discussion on types of Performance Metrics to gauge effectiveness (Charge 5):

- **Enrollment**
  Enrollment data and trends

- **Equity**
  The enrollment trends are disaggregated by race and ethnicity
  The outcome metrics for retention, progress, and completion are disaggregated by race and ethnicity

- **College Completion**
  Number and percent of college students who exit college with a degree or certificate

- **Post College**
  Number and percent of college students employed after exiting college with a degree or certificate
  Number and percent of 2-year college students who exit college with a degree and transfer to a 4-year college
Pre-COVID19

- CDL exemptions: Ag, trash, fireworks, and motion pictures. Precedence set and this could be used for telecom.

- There needs to be a study done on the industry with scientific data gathered, so we know the actual state of the industry and salary competitiveness. No reliable data set for industry specific workforce analysis.

- Carriers demanding rigorous background checks impacting contractor's ability to recruit. Approx. 25% of all job offers extended can be executed on after background check.

- Need to understand how local and federal grants can be tapped for Broadband Workforce development. Industry Information is not permeating down to the local level. There seems to be no clear communication between industry and schools, workforce, and other stakeholders.
Training Programs Discovery and Evaluation
1. **TIRAP** – Telecommunication Industry Registered Apprenticeship Program

2. **Independent Electrical Contractors**  

3. **PCCA** is currently working with three schools with a Utility Service Technician Programs in Missouri, Wisconsin and Ohio. State Tech in Missouri is along the farthest with 23 students through the first year and 23 enrolled next year. The school is currently working on a building project that will be a first in the nation that we know about.

4. **Alliance at AT&T.** The Alliance is a joint labor-management program that has trained tens of thousands of union members at AT&T, Avaya, and Nokia to adapt to new technologies and upgrade their skills.

5. **Wake Tech** -  [https://www.waketech.edu/](https://www.waketech.edu/)
1. Aiken College: [https://www.atc.edu/Study/Programs-of-Study/Technical-Education/Tower-Installation](https://www.atc.edu/Study/Programs-of-Study/Technical-Education/Tower-Installation)

2. Professional Bachelors and Masters Program in Telecom (e.g. Uni. of MD)


4. NATE Program with DOL Funding: [https://natehome.com/safety-education/susan-harwood-grant-courses/](https://natehome.com/safety-education/susan-harwood-grant-courses/)

5. Fiber Optic Association: FOA-University [https://fiberu.org/#Self-Study%20Courses](https://fiberu.org/#Self-Study%20Courses)
1. **The Community Technical College system in Wisconsin**
   [https://www.witc.edu/continuing-education-and-training/professional-development/broadband-academy](https://www.witc.edu/continuing-education-and-training/professional-development/broadband-academy).

2. **SEATAC Airport has Airport University**, a workforce development program that supports employer - Community Tech Ed College partnerships [https://www.portseattle.org/community/workforce-development](https://www.portseattle.org/community/workforce-development).

3. **The Last Mile (TLM)**, a non-profit, has offered coding and web-development courses to inmates at San Quentin State Prison in California since 2014, providing inmates with technical training, income, and connections to outside employers that have shown to substantially reduce recidivism. Today, TLM offers software engineering training in 11 facilities in 4 states. This program, and others like it, could easily be used to support the telecom workforce going forward.

4. **Integrated Basic Education and Skills Training (I-BEST) Team Teaching Model**  
   [https://www.sbctc.edu/colleges-staff/programs-services/i-best/](https://www.sbctc.edu/colleges-staff/programs-services/i-best/)

5. **Broadband Academy Online Teaching Model**  
   [https://www.witc.edu/continuing-education-and-training/professional-development/broadband-academy](https://www.witc.edu/continuing-education-and-training/professional-development/broadband-academy)
2/3 programs started after 2010

- Majority of them are endorsed/supported by Industry Players

- Community Colleges and Universities: All of them created programs due to industries’ requirement of professionals

Challenges:

- Needs central recognition and branding
- Needs government’s funding (state and federal) to scale (remote locations and online presence)
- Needs mechanism to “transfer” credits, credentials, and students
Charges Review

**Charges:**
- Identify Stakeholders *(completed last year – Fall 2019)*
- Identify and validate Skills Gap (Charge 1) *(completed last year – Dec 2019)*
- Formulate Solutions and Recommendations (Charges 2 & 3) **In progress**
- Training Programs (Charge 4) **(Completed)**
- Performance Evaluation Criteria (Charge 5) – **In Progress**

**Approach:**
- Working group Expertise
- Subject Matter Expert Calls
- Research
- Comparing notes and collaborate with other industry workforce groups
Focus Next Quarter

- Issuing Recommendations (PreCOVID19/PostCOVID19 Approach)
- Progressing on Report Writing
- Inviting Grant Allocation SME and including Grant access eligibility for each of the stakeholders
# Pre and Post COVID-19 Analysis: Example

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<tr>
<th>Pre COVID-19</th>
<th>Post COVID-19</th>
<th>Observations</th>
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<tbody>
<tr>
<td><strong>VISIBILITY ON THE NATIONAL STAGE</strong></td>
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<tr>
<td>LOW: No specific job classifications/occupational codes on DOL database</td>
<td>HIGH: Universally recognized as essential employees</td>
<td>Opportunity to Re-Brand the Industry; attract new workforce</td>
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<tr>
<td>Broadband identity crisis</td>
<td>DOL to allocate more funding for dislocated workers</td>
<td>How much of $100M will come to our industry?</td>
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<td><strong>DEMAND OF SKILLED EMPLOYEES</strong></td>
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<td>HIGH: Rural and new technology deployment has increased demand for skilled workers</td>
<td>EVEN HIGHER: Workers are not slowing deployment efforts</td>
<td>More skilled workers are needed to meet the increasing demand</td>
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<tr>
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<td>The demand for faster deployment is evident</td>
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<tr>
<td><strong>CHALLENGES</strong></td>
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<tr>
<td>Unemployment Rate: Low</td>
<td>Unemployment Rate: High</td>
<td>More workers may be available for upskilling or training in this industry</td>
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<tr>
<td>Hourly Wages &amp; Benefits: Low</td>
<td>Potential for Higher Wages &amp; Benefits to attract new workers</td>
<td>Employer-specific responses to this circumstance will dictate outcomes</td>
</tr>
<tr>
<td>Background screenings credentials and basic job qualifications: High</td>
<td>Unknown how this may change based on recent events; perhaps relaxed requirements</td>
<td>Employer-specific responses to this circumstance will dictate outcomes</td>
</tr>
<tr>
<td>Availability/ Variety of Training &amp; Upskilling Programs: Low</td>
<td>Likely that new online educational platforms will open up. State funding will be more likely to reduce the unemployment rate</td>
<td>Along with State and Federal Funding, Educational Institution or Vendor-specific responses will dictate outcomes</td>
</tr>
<tr>
<td>Funding/Scholarships/Grants available to individuals in this industry: Low</td>
<td>Unknown if FEMA will reimburse states/localities for investing in this as an emergency response, DOL, State Agencies likely to invest more</td>
<td>Depends on Federal and State lawmakers</td>
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Industry Engagement KEY for rebranding

VIKOR @VIKORinc · Mar 23
We're proud to be a part of the 16 critical infrastructure workers identified by the CISA. We're working even harder to keep America connected. Thanks to all who are doing the same! #OneNation #COVID19Impact #ElevateWireless #DedicationtoElevation

cisa.gov/identifying-cr...

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#BroadbandWorkforce
#WorkforceDevelopment
#TelecomCareers
#apprenticeships
#CoolJobs
OPEN FLOOR FOR COMMENTS AND DISCUSSION
Develop recommendations to make more widely available and improve job skills training and development opportunities for the broadband infrastructure deployment workforce.

1. **Identify any gaps** in broadband infrastructure deployment skills that could inhibit the pace of deployment of **fixed and mobile broadband connectivity** across the nation.

2. For each issue identified, **formulate possible solutions that stakeholders** could implement. Proposed solutions, to the extent possible, should be **adaptable and scalable** to different deployment areas and technologies to encourage widespread adoption.
3. **Recommend possible steps** that stakeholders could take to **attract more skilled professionals** to join the broadband infrastructure deployment workforce.

4. **Identify any existing job skills and training programs** that could serve as a model for stakeholders in developing measures to bridge any skills gaps in broadband infrastructure deployment.

5. **Recommend possible performance metrics to gauge the effectiveness** of existing and future job skills and training programs and develop steps that can be taken to continually improve the effectiveness of such programs.
STRUCTURE OF THE REPORT:

1) Introduction and Background
   • Working Group Charges
2) Identification of Stakeholders
   • How the report is structured
3) Skills Gap for Broadband Deployment and Associated Challenges
   • Why do we have skills gap? (three sub-sections, one per each subgroup)
   • Results in Brief or Summary of Challenges and Solutions (response from the working group members to the questionnaire)
4) Proposed Solution – How to attract more skilled professionals
   • (has to be adaptable and scalable)
   • (has to be applicable to different deployment areas and technologies)
5) Examples of Successful Job Training Programs
   • Recommendation on Nationwide Roll Out
6) Performance Metrics to gauge the effectiveness
7) Definition/Terminology/Glossary of terms