Why It's Time to Focus on Broadband Workforce Development

August 18, 2022

Sponsored by

Moderator: **DOUG Dawson**, President, CCG Consulting

Speakers:

Alan Fitzpatrick, Co-Founder, Open Broadband (NCBM Board Member)

Mark Boxer, Technical Manager, OFS (NCBM and FBA Board Member)

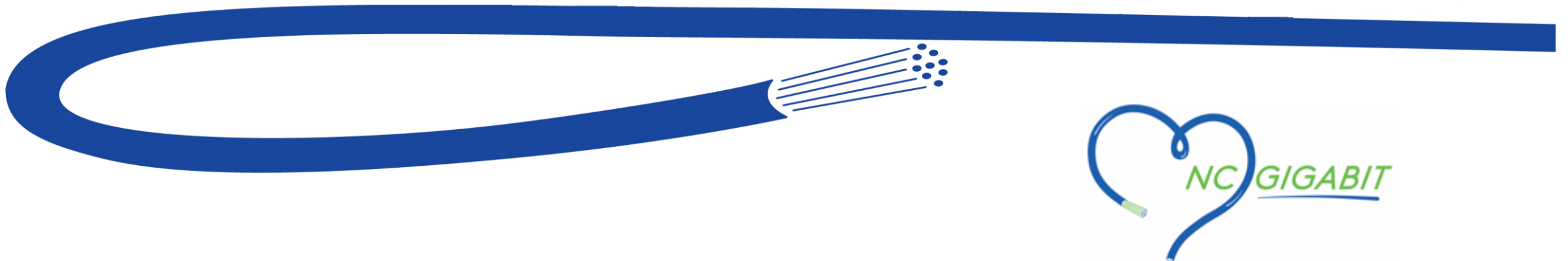**Jimmi Hendricks,** Supervisor of OSP Splicing, Wilson Greenlight Community Broadband

Deborah Kish, VP of Research & Workforce Development, Fiber Broadband Association (FBA)

ISP Technician Training Programs
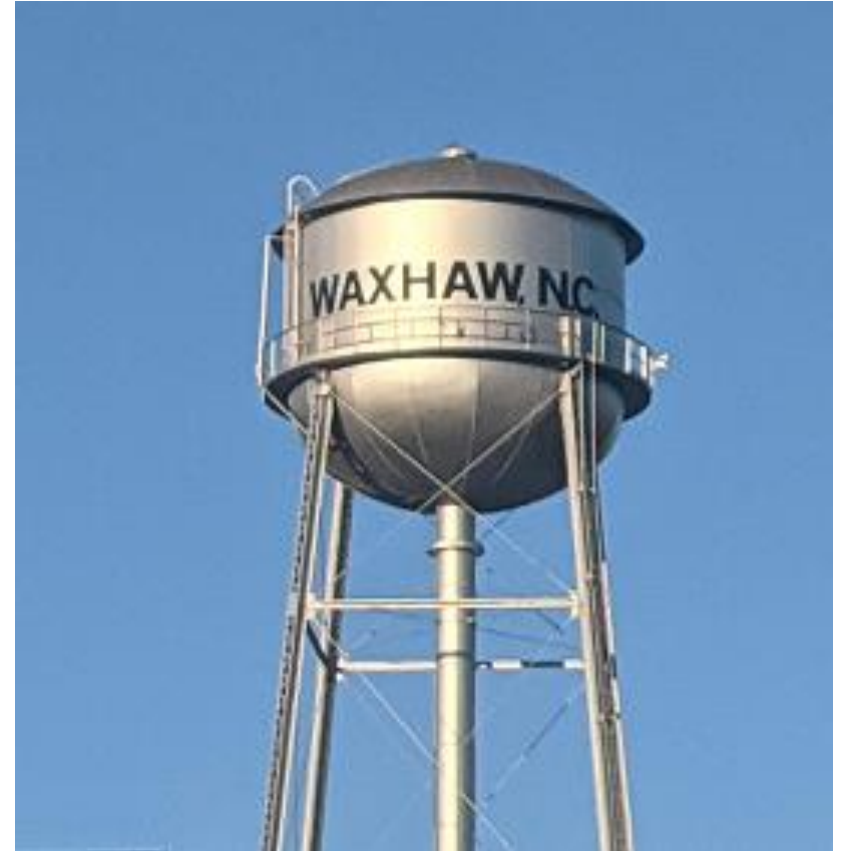
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Alan Fitzpatrick
https://openbb.net
980-246-8989

Who is Open Broadband LLC?

- NC owned and operated ISP (Waxhaw)

- We provide broadband in underserved areas in SC, NC, and VA

- Additional support of Public Wi-Fi Zones and Analytics

- We love to support and expand entrepreneurship!

- **Workforce development** (Technician Training Programs)

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Why ISP Technician Training?

U.S. BUREAU OF LABOR STATISTICS

"2020-2030…about 21,500 openings for telecommunications equipment installers and repairers are projected each year, on average, over the decade"

$45 Billion "Internet for All" Initiative to Bring Affordable, Reliable High-Speed Internet to Everyone in America
- U.S. Department of Commerce.

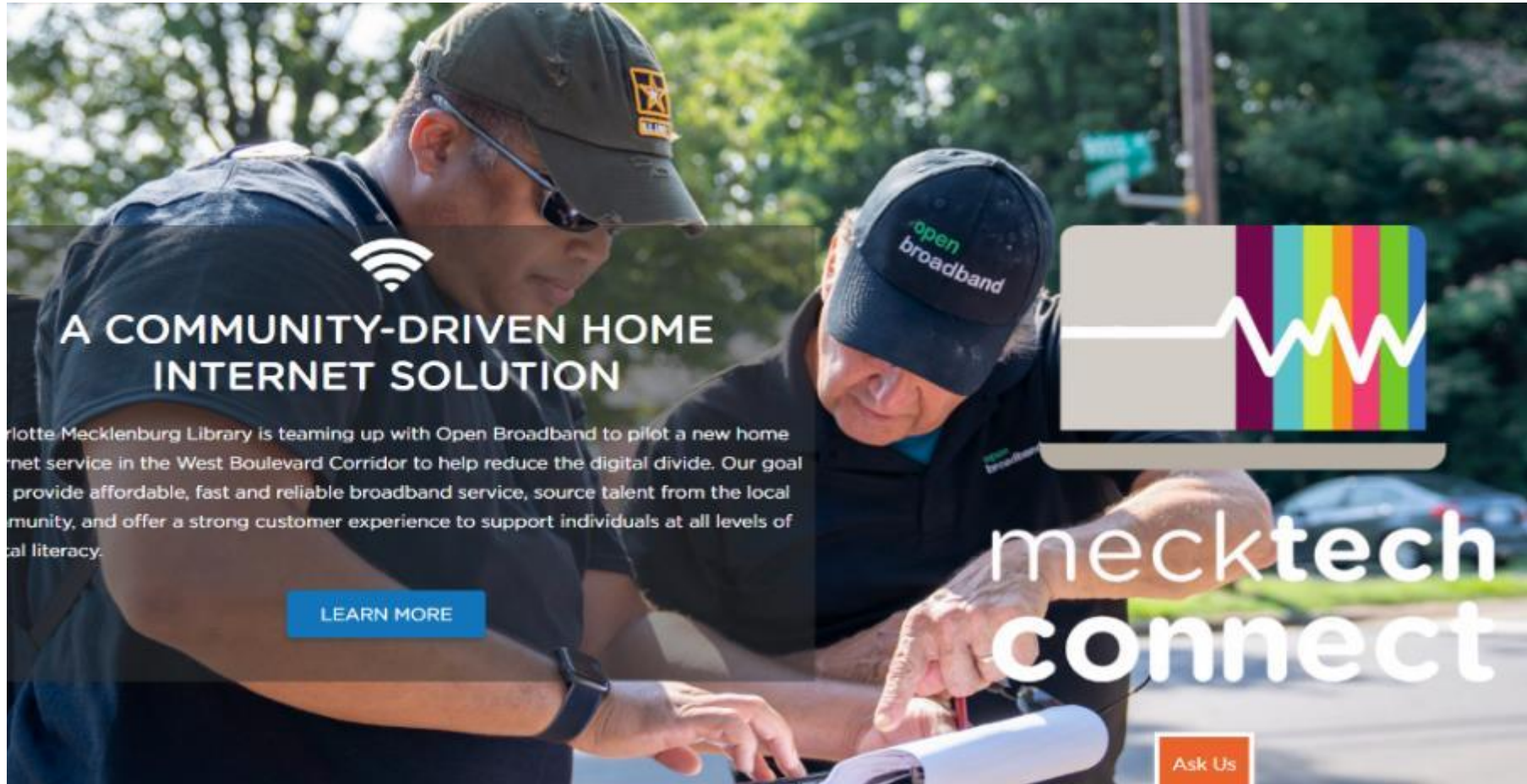**FIERCE** Wireless   Wireless   Private Wireless   5G   Tech

5G

Marek's Take: The telecom industry needs more qualified workers

By Sue Marek • Jun 28, 2021 10:42am

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1. Public-Private Partnership with Library
Free public Wi-Fi in West Charlotte Neighborhoods

A COMMUNITY-DRIVEN HOME INTERNET SOLUTION

...lotte Mecklenburg Library is teaming up with Open Broadband to pilot a new home ...net service in the West Boulevard Corridor to help reduce the digital divide. Our goal ... provide affordable, fast and reliable broadband service, source talent from the local ...munity, and offer a strong customer experience to support individuals at all levels of ...al literacy.

LEARN MORE

mecktech connect

Ask Us

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Hired 5 local residents. Topics covered during training

1) What is the internet
   a) Components
   b) Hardware
   c) Software
   d) Types of networks
   e) Delivery mediums
   f) What is an IP address? And how to change the one on your computer
2) How our equipment works
   a) Frequencies used (pluses and minuses)
   b) Environmental requirements
   c) What is POE
3) Troubleshooting
   a) How to use Google like a pro
4) Terminating ethernet cable
5) Configuring a radio
6) Configuring a switch
7) Conducting a site survey
8) How to aim a radio

Networking 101 Module 1

1. Network Components and Types
2. Explain components and types of computer networks.
3. Describe the types of networks.
4. Describe internet connection types.

Networking 101 Module 2

1. Network Devices
2. Explain the purpose of devices on a network.
3. Explain basic network devices.
4. Explain security devices.
5. Explain other network devices.

Networking 101 Module 3

1. Network Cables
2. Explain the characteristics of network cables.
3. Describe networking tools and their purpose.
4. Explain the purpose and characteristics of common types of copper network cables and connectors.
5. Explain the purpose and characteristics of common types of fiber network cables and connectors.

Networking 201 Module 1

1. Device to Network Connection
2. Configure devices for wired and wireless networks.
3. Explain MAC and IP addressing for computer networks.
4. Network Addressing
5. Static and DHCP IP addressing
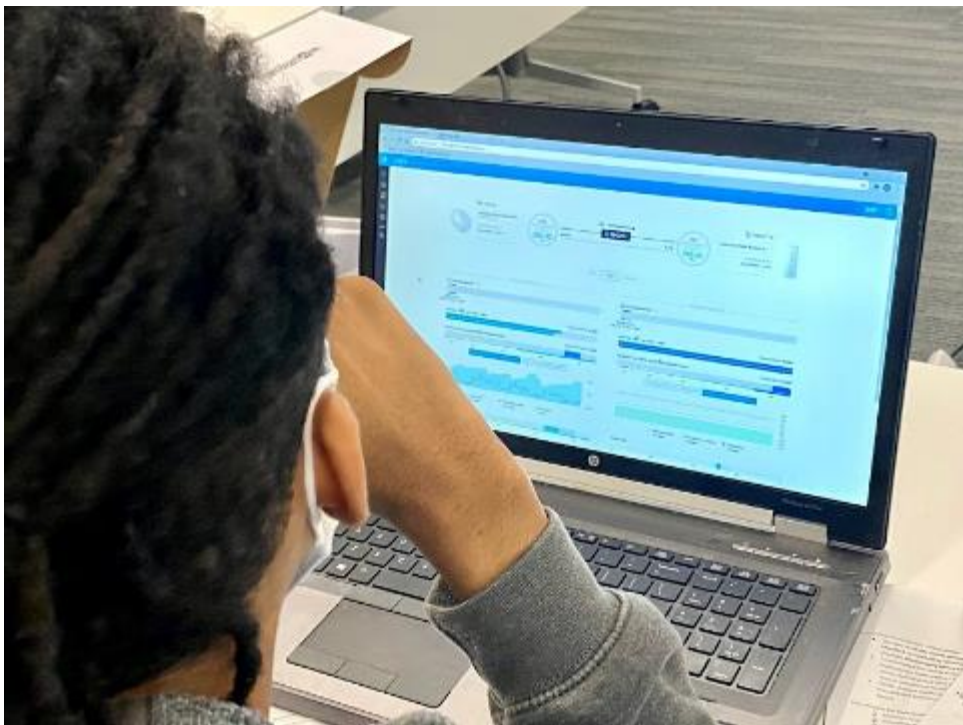6. How to set your computer to a static IP address.

Networking 201 Module 2

1. Network Troubleshooting
2. Troubleshoot problems and solutions related to networks.
3. Explain the six steps of the troubleshooting process for networks.
4. Troubleshoot common and advanced problems related to networks.
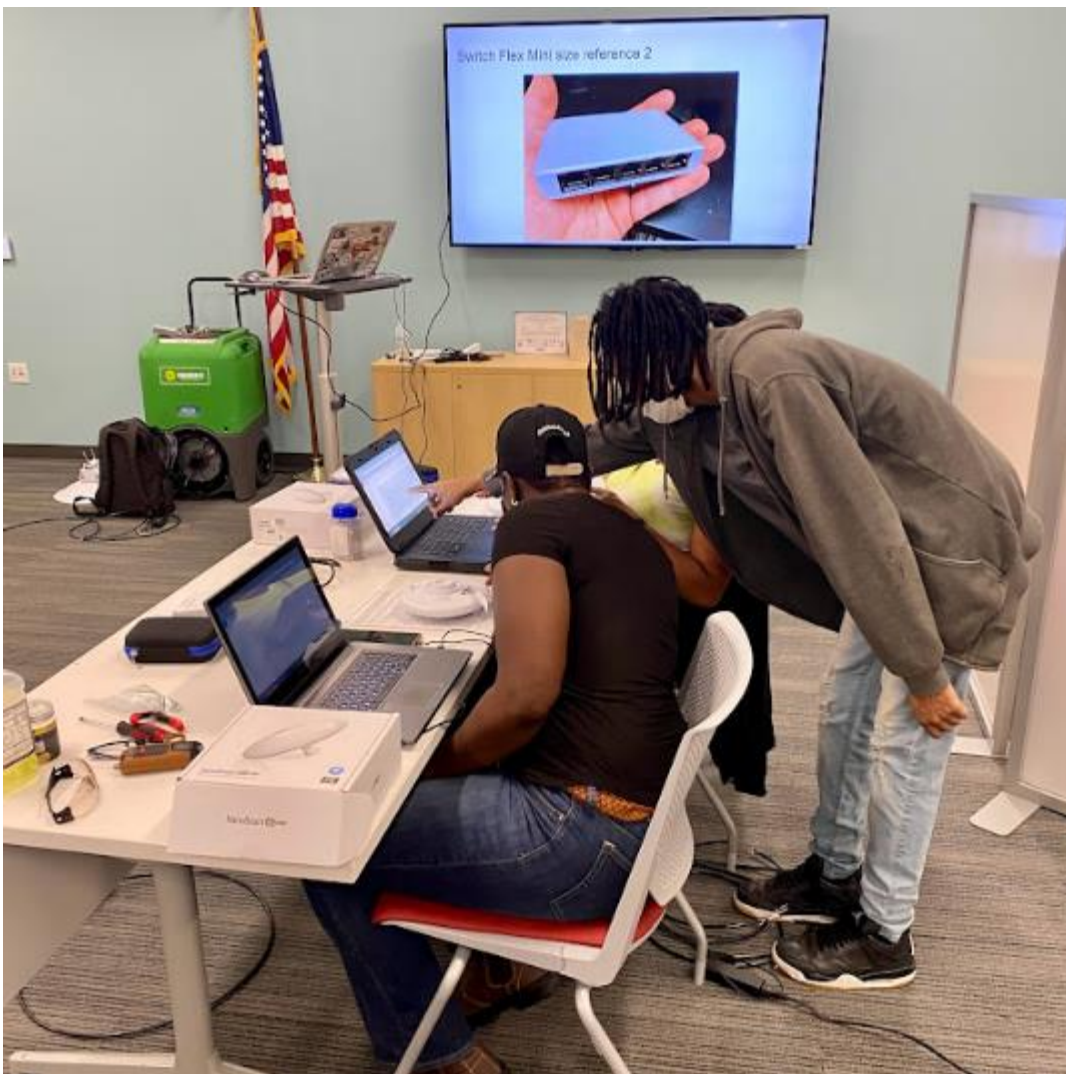
Terminating ethernet cable on day 1

Configuring equipment

Outside of the classroom

Configuration and aiming equipment

Charlotte Mecklenburg Library Project Wi-Fi Techs
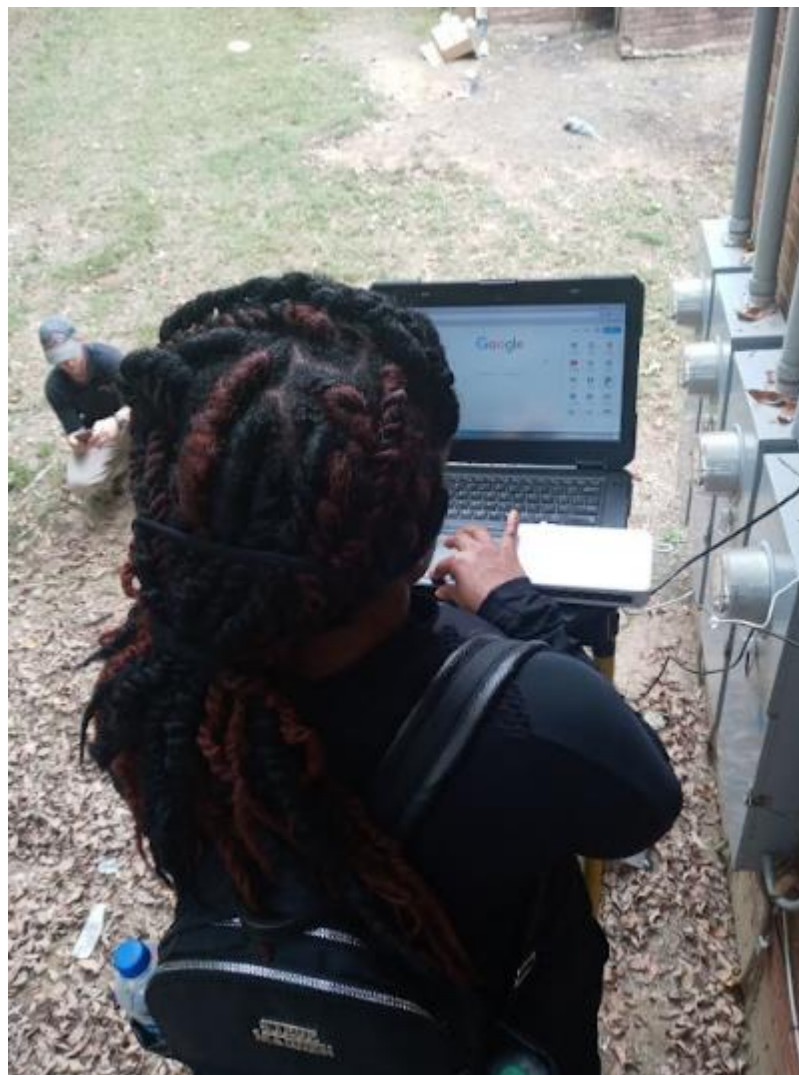
Continued learning after formal training

The learning doesn't stop once the course ends. We transition to an on the job style of working that reinforces the foundation that was established while building additional skills to the student's tool box.

Every student does a rotation of a residential installation, they are also afforded the opportunity to assist in a cell tower deployment and get exposed to data center operations. Based on their interests we also provide training in several certification courses and NOC operations training.

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Integration with the rest of the team for OJT

Network Operations Center (NOC) training and other certs

2. City Startup Labs and Access Charlotte
Job Training for Returning Citizens

: REENTRY JOB OPPORTUNITY :

This is an entry-level technical position with training provided, working under limited supervision, to perform cabling and equipment installs. Will help lead, oversee and participate in performing a wide variety of skilled tasks with low-voltage structured cable including making and installing, mounting antennas and access points. Must have reliable transportation, be handy with tools and in good shape.

GET TRAINED TODAY! CITY STARTUP LABS HAS ONLY 8 SLOTS AVAILABLE HELPING TO INSTALL NEW INTERNET SERVICES THROUGHOUT CHARLOTTE WORKING WITH OPEN BROADBAND.

$15/HR + PAID TO TRAIN · STEADY WORK THROUGH THE END OF THE YEAR · TOOLS PROVIDED

If you have been justice-involved /formerly incarcerated or know someone who has and is ready to get busy fixing Charlotte's Digital Divide – APPLY TODAY! (see below)

See the full job description here – READ BEFORE APPLYING

Returning Citizens Program
Partnership with City Startup Labs

Returning Citizens Program
Partnership with City Startup Labs

CITY OF CHARLOTTE

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3. Training Program at Rappahannock Community College

4 Day Program spread over two weekends

The course introduces students to the concepts and practical skills needed to become an internet installation technician

RCC provides the infrastructure and Open Broadband provides the syllabus and instructors.

6-10 students/course.

Upon successful completion, top students will be hired by Open Broadband as installers.

All students will have learned skills to enter the telecommunications field.

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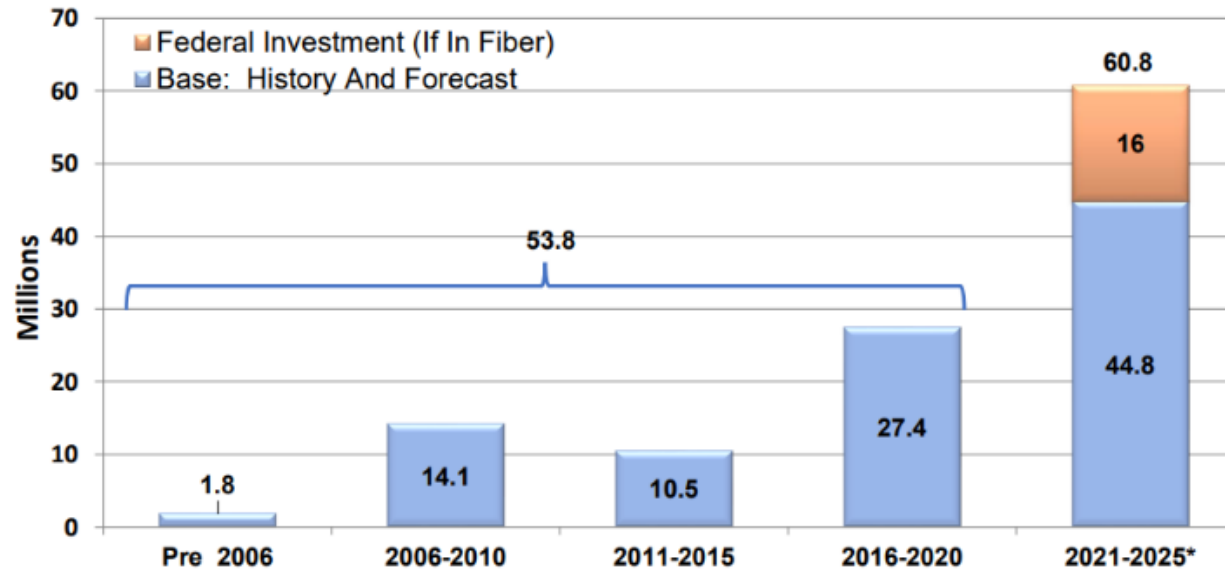
ISP Technician Training

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Introduction to the Fiber Broadband Association (FBA)

- Established in 2001

- FBA provides advocacy, education and resources to companies, organizations and communities who want to deploy the best networks through fiber to the home, fiber to the business and fiber everywhere.

- Member based

- Hundreds of members in the US and Canada
  - Telecommunications Service Providers of all types
  - Vendors of telecommunications equipment
  - Installation contractors
  - Consultants

- FBA is affiliated with similar groups advocating for fiber optic networks around the world.

Fiber is growing dramatically – significant need for trained technicians

More New Fiber May Be Built In This 5-Year Period Than All To Date
Preliminary Homes Marketed Long-Term Forecast
RVA Whitepaper 2021

*This Early 21-25 forecast could be somewhat optimistic given potential supply constraints, federal infrastructure moneys going to non fiber etc.

17   12/06/2021

Job Opportunities for Technicians in Fiber Optics

- Installers*
- Splicers*
- Maintenance Technicians*
- Linemen
- Low voltage communication systems installers
- Manufacturing
- Engineering
- Contractors
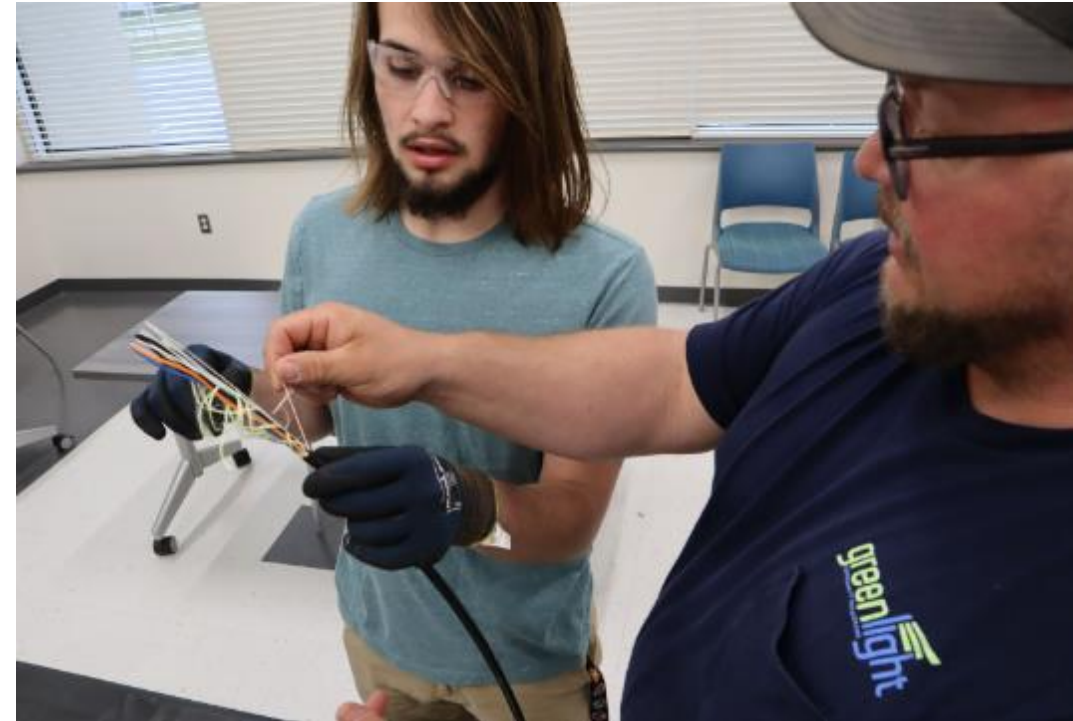

*Skills learned through this program

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FBA OpTIC Path™ Course and Certification Program

- Nationwide program

- US Department of Labor Approved National Apprenticeship Program

- Offered through community colleges and vocational schools in conjunction with a telecom service provider

- Deep focus on fiber-related knowledge and skill set for fiber optic technicians, fiber splicers and premise technicians

- Course designed to lead to a future apprenticeship

OpTIC course intent

- To date, much fiber optic training has **occurred by OJT or vendor training** for people already in the industry
- Existing fiber training is **often expensive**
  - Good for already employed individuals
- Existing training is often **relatively short**
  - Instructors and hotels are expensive
  - Students come to the course
- No generally recognized entry-level credential for fiber optic broadband technicians
  - Credentials are available, but not widely accepted by FTTH hiring managers

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OpTIC course intent

- **Intent is for OpTIC to be a trusted FTTH industry hiring credential**
  - Detailed curriculum, aiming for best practices
  - Comprehensive mix of theory and hands-on

- **This course comes to students**
  - Hence, the need for school and telecom provider relationship

- **Designed to be relatively inexpensive and excellent value**
  - Looking to attract people from outside the industry

- **Ultimately looking to compress the amount of time to bring qualified people into the industry**

PJ, learning to splice

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Gene Scott

- OSP manager for Greenlight
  - Multi-decade career in telecom, telco, municipality
  - Past president of NCBBM

- Developed fiber training program with WCC

- Intimately involved with OpTIC
  - Provided guidance on curriculum, hiring manager perspective

- Passionate about education and training

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Gene Scott

FBA Deployment Specialists Committee

- Diverse set of industry influencers focused on fiber deployment
- Brendan O'Boyle, PLP, Chair
- Reviewed curriculum and providing ongoing suggestions

Brendan O'Boyle

OpTIC Agenda – Chapter List

- Introduction
- Applications
- Why Fiber (Advantages)
- Theory
- Safety
- Fiber Types
- Fiber Geometry
- Cables
- Cable Structures
- Tools
- Architectures & Topologies

- Connectors
- Splicing
- Splitters
- Cable and Fiber Management
- Test Equipment
- Testing
- Installation
- Systems Overview
- Optical Network Terminals
- Troubleshooting
- Glossary

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Course is designed to be roughly 40/60 knowledge/skills

Knowledge

Skills

Repetition

- Critical skills are repeated throughout the curriculum
- The curriculum is presented in order to build experience with skill repetition
  - Connector cleaning (multiple times)
  - Cable stripping (multiple times)
  - Splicing and splice on connector building (several times)
  - Testing (several times)
  - Closure building (2x minimum)
- Focus on building confidence and muscle memory

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Greenlight – Jimmi Hendricks

- About Greenlight
- Benefits to Greenlight
- Suggestions to new course operators

Pilot with Greenlight

- **Justin Hayden –** **"The Fiber Broadband Association OpTIC course has been incredible!** I feel lucky to have had the chance to meet some amazing people along the way. I have not had any hands on experience with fiber before this class, and I now feel confident in my skills, although more practice never hurts."

- **Jimmi Hendricks** – **"Just wanted to say how much this class has actually helped in real life.** We had a significant outage this past Friday and have been working nonstop to repair the network. I pulled Cesar into the repair team and he was amazing! **The training he received paid off big time. He was able to build closures, prep and splice cables on his own and did an amazing job! I picked Cesar strictly because of the training he received. A huge thanks to FBA and all involved this shows how important this class is and will be!"**

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Current Support Resources

MDU surface-mount simulation

- Presentations (> 1000 slides)
  - Includes chapter reviews
- Student kit (lays out exercises)
- Train the Trainer Resources
- Materials list
- Instructor skills assessment
- Calendar scheduling tool
- Photo and video library from pilot
- Class timing planning tool
- Final exam and LMS
- Certificates
- FBA connection to vendor partners

How do I start a course?

Develop partnership Contact FBA

3-6 months from class start

2-4 months from class start

6-10 weeks from class start

2-6 weeks from class start

Immediately upon completion

Preparation

Hold classes

Post Graduation

Materials
• Order materials as needed

Marketing
• Begin advertising

Administrative
• Sign agreements
• Place purchase orders
• Submit student names
• Load LMS

• Report scores and receive certificates

• Coordinate internships and apprenticeships (as appropriate)

Teacher and class prep
• Determine and test instructors
• Review TTT materials
• Review videos
• Attend OpTIC support calls

Class prep
• Determine LMS
• Develop class timing, location and instructor schedule

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Questions or ready to start?

Deborah Kish – FBA
- FBA VP, Research & Workforce Development

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