

# Workforce Training: Quantum Technician



**Brian Rashap, PhD**  
**CNM Ingenuity**  
**June 30, 2026**

# A Physicist, an Engineer, and a Technician walk into a classroom..



Megan Ivory, PhD  
The Physicist  
Sandia National Labs



Shawn Morales  
The Technician  
CNM



Brian Rashap, PhD  
The Engineer  
CNM

## The CNM Quantum Team

# Quantum Technician Bootcamp

- 10-week full time immersive training (400 hours)
- No prior math or science required

## Curriculum

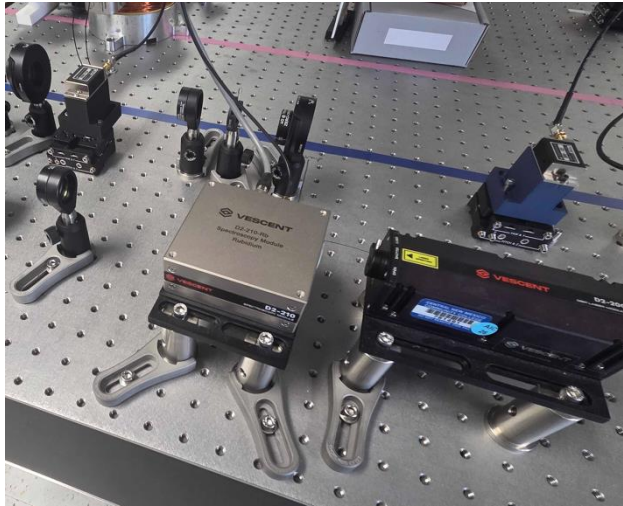
- Optics and Photonics
- Ultra High Vacuum Systems
- Quantum Phenomenon
- Algebra, Trigonometry, Statistics
- Problem Solving, Documentation
- Soldering and Fundamental of Lean Certificates

## The Students

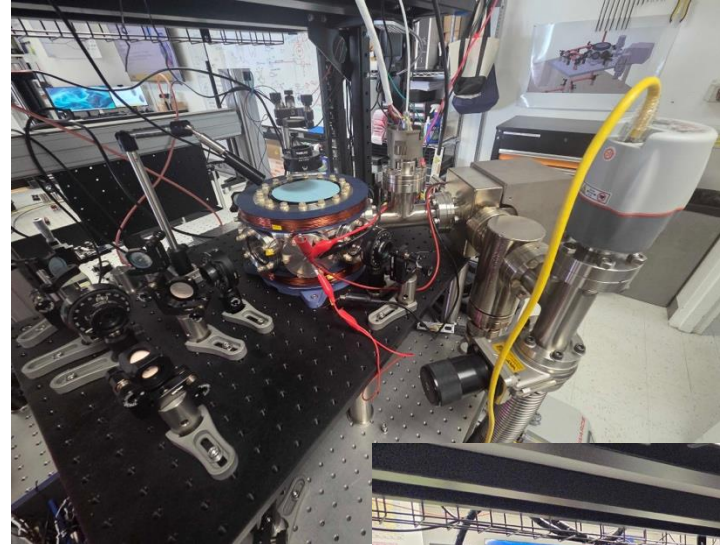
- Retail, IT, Accountants, Gemologist, Brewery Owner, Military Veterans, Doula, Biochemist, Veterinary Nurse, Software Developer, Film Lighting Tech, Artist.
- Ages 21 to 60



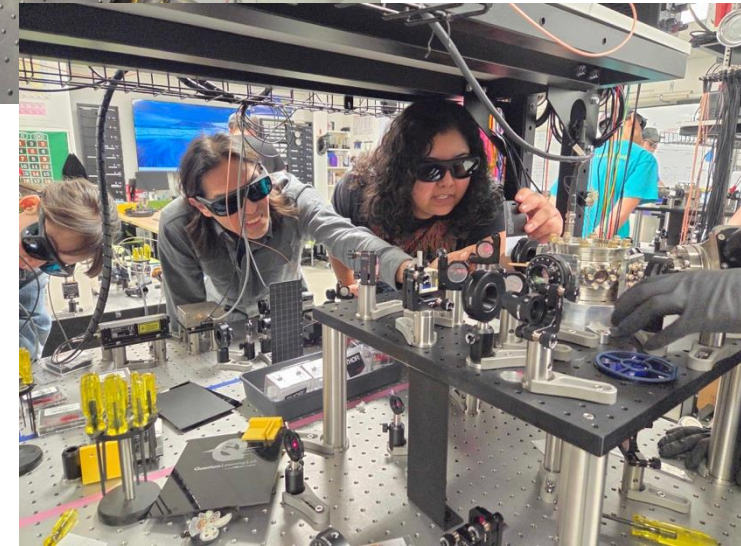
# Quantum Learning Lab - Not your typical college classroom



Students build Rb-85 MOT  
from laser to chamber  
using individual  
components over 10 days



Students build their own  
Rb vapor cell spectroscopy system



# Recognized National Leader in Quantum Workforce Training

CNM is Workforce Co-Lead  
Elevate Quantum Tech Hub



CNM In?enuity, Inc.




Only Community College in  
Quantum Systems Accelerator

















NM and National Companies  
Supporting and Recruiting Students
























# Graduate Spotlight – Zoe Larson

- Grew up in Colfax County in a log cabin built by her parents
- Web programmer prior to bootcamp
- Now employed as a Field Service Engineer for Edwards Vacuum Systems



*“I wasn’t sure what to expect when I first started the Quantum Technician Bootcamp. By the end of it, I was blown away by the quality of the instructors, the depth of hands on-training, and how quickly employers recognized the value of the skills I gained.” – Zoe Larson*

# The Graduates Last Seen At:



Web Programmer →  
Field Service Engineer @  
Edwards



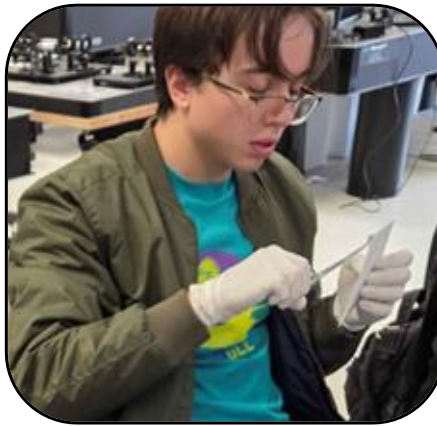
Special Forces Medic →  
RF Technician @ Space Force



Jeweler →  
Quantum Electromechanical  
Build Technician @ Qnnect



Army Veteran →  
Quantum Technician @  
Bandalier Tech



First job out of HS →  
Photonics Engineering  
Technician @ Monarch Quantum



Veterinary Tech →  
Quantum Electromechanical  
Build Technician @ Qnnect



Doula →  
QU-REACH Summer Research  
Experience at UNM



Maintenance Tech →  
Quantum Technician @  
Aerovironment



IT Specialist →  
Quantum Technician @  
Quantinuum



Particle Physicist →  
Project Manager @ EGTC



# Growing Manufacturing and Quantum Start-ups in New Mexico



*"Initially, we were only focused on building the open access network and a R&D facility to support work with our design partners. After learning about CNM's program, we were motivated to expand our operations and establish a manufacturing facility in our Albuquerque space."*

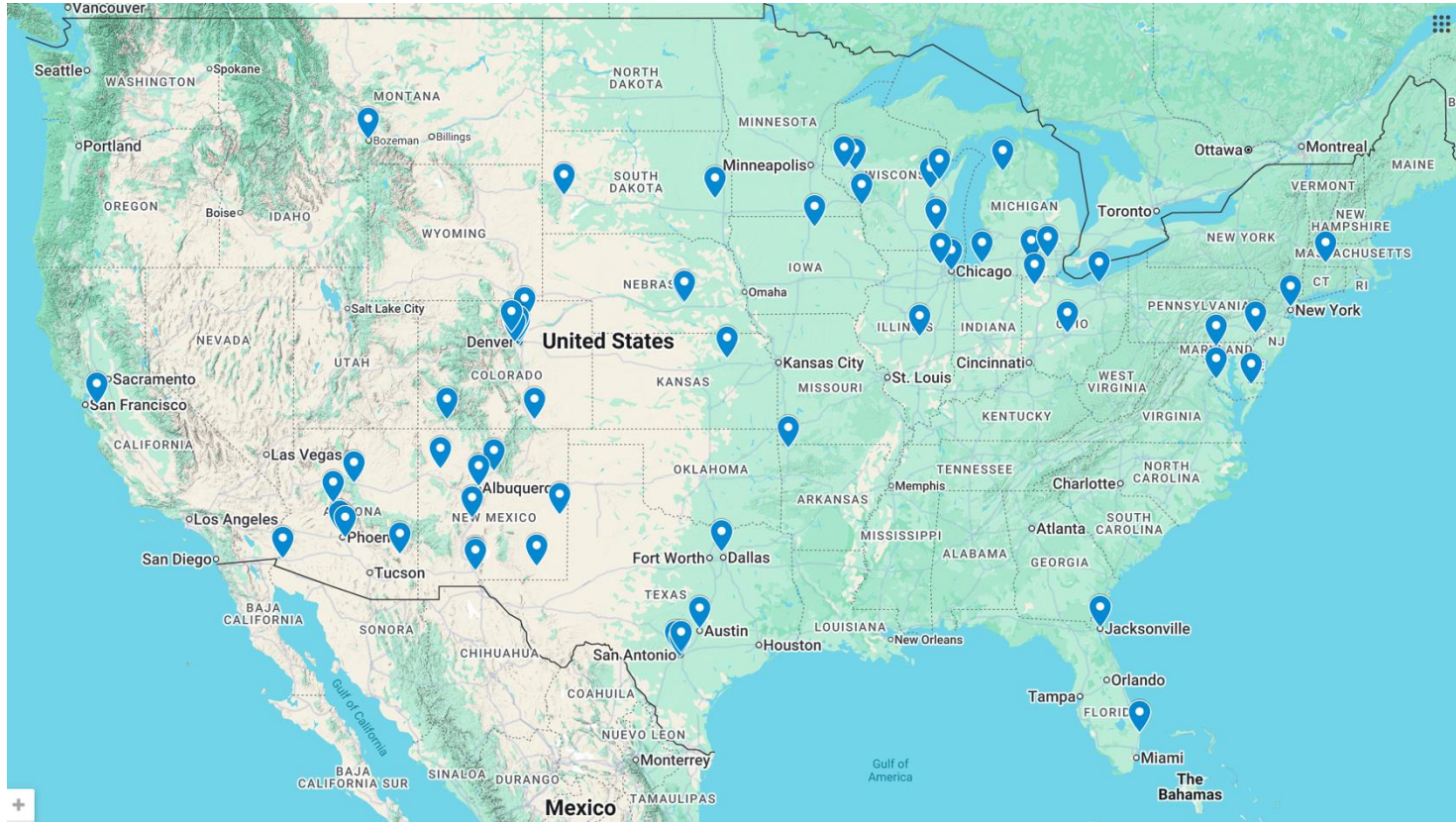
*Noel Goddard, PhD, CEO Qunnect*

*"CNM' is producing exactly the talent we need, people with hands-on optics and quantum training who can contribute to a real lab environment and in the field from day one. The program bridges a gap that most universities do not address: turning theoretical knowledge into practical, deployable skills. This is the most direct path to building a team that is ready to execute on our mission."*

*Stephen Buchanan, Founder & CEO Bandelier Technologies*



# Quantum Undergraduate and Technician Education Network



Quantum Educator Workshop

Quantum Industry/Educator  
Conference



# Educator Spotlight – Chris Spaulding

*"The Ingenuity Quantum Computer Workshop for Trainers is invaluable to SENMC and Eddy County. The information shared at the Quantum Computing workshop went above and beyond our expectations. Our experience with Ingenuity has inspired us to create our own workshops here in Carlsbad to begin exposing younger people to quantum computing.*



*Additionally, it is apparent the Ingenuity Instructors truly love what they do. Their love of teaching and sharing their knowledge and experience is infectious! SENMC is greatly looking forward to further working with them on future projects.”*  
– Chris Spaulding, Interim Vice President of Workforce Development and Community Engagement @ SENMC



# Expanding Quantum Education Across NM

## Teaching Focused: Quantum Networking Node

- Expected to be installed in November
- Hardware training in-person in ABQ
- Cloud access to community college students from across the state.

## Expanding the Quantum Workforce Training

- Engaged with Southeast NM College, Eastern NM Univ, Dona Ana CC, Santa Fe CC, and Navajo Tech

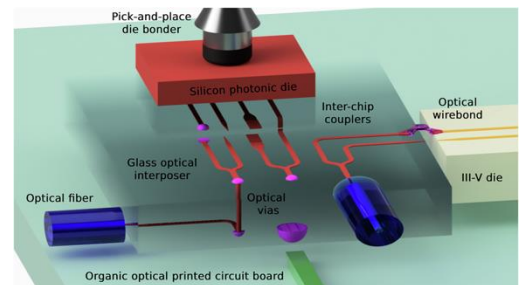
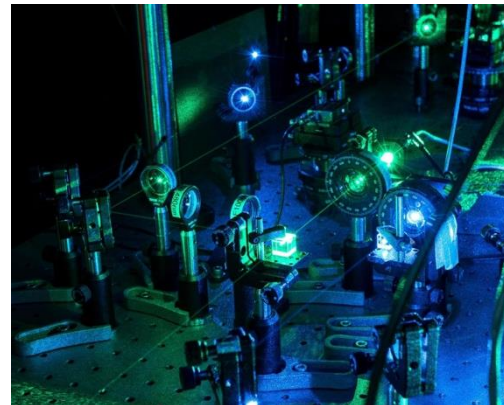
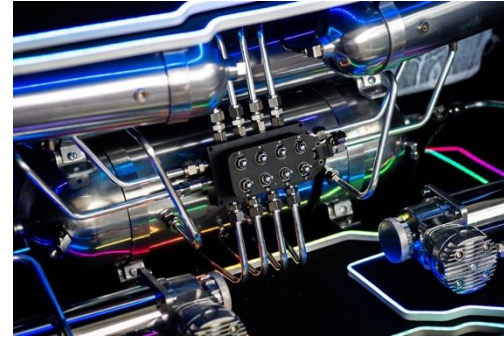


# Supply Chain is the key to state-wide engagement

Growing / attracting a world class supply chain, NM become a magnet for quantum companies:

- Light Engines / Lasers
- Fiber Optics
- Optics and Optomechanics
- Advanced Machining
- Cable Harnesses
- Thin Wall Welding
- PCB Manufacturing and Repair

These economic base employers allow more of NM to engage in the quantum revolution.



# Next Steps for CNM and Advanced Technology Workforce Expansion

- **Permanent Workforce Training Funding**

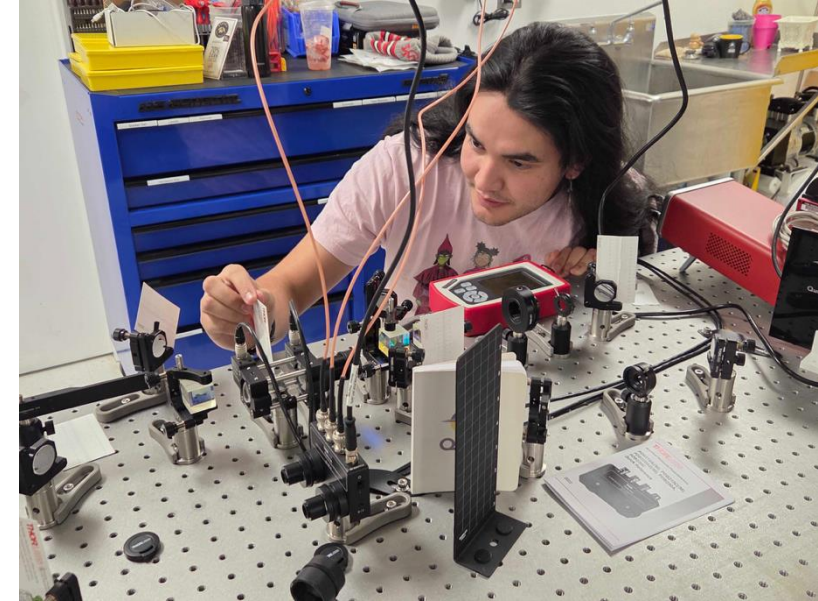
- Establish recurring funding stream for short-term, high-demand programs
- Demonstrate ROI: completions, job placement, wage gains
- Align with industry demand and expand work-based learning

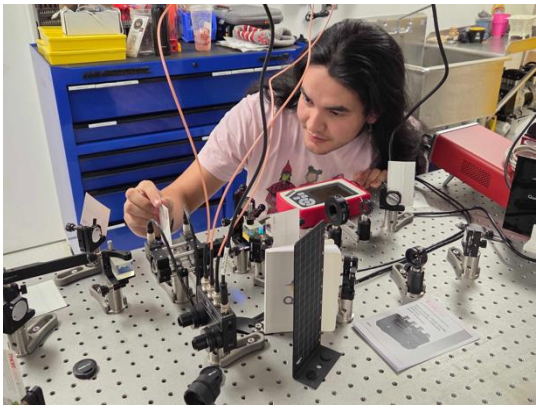
- **Faculty/Instructor Stipends – Hard-to-Fill Programs**

- Target critical shortage areas (quantum, hypersonics, cybersecurity, trades)
- Close industry–academic pay gap to recruit/retain talent
- Launch and scale stipend model tied to workforce outcomes

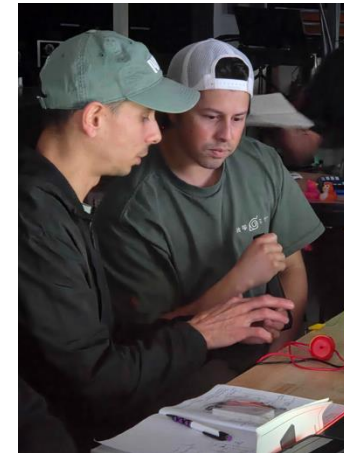
- **Faculty/Instructor Endowments**

- Create sustained funding for high-demand faculty positions
- Anchor long-term talent pipelines in key sectors





# Thank You for Your Support



# Back-up Material



# Quantum 2.0 – The New Quantum Revolution

## Quantum Computing

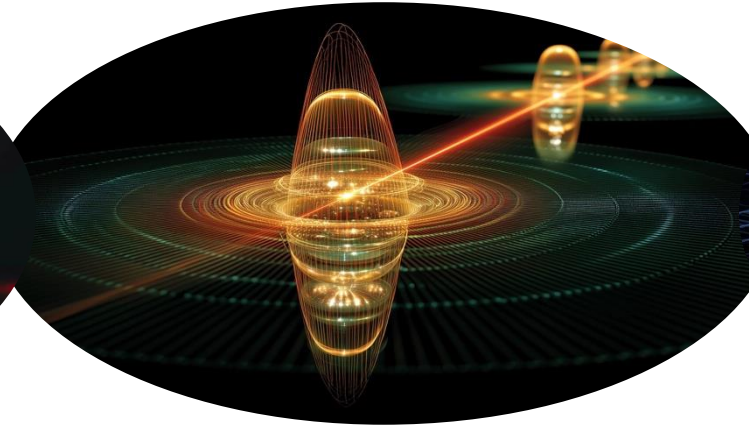
A new computing paradigm that will help us solve problems in completely new ways



- BREAK SECRET CODES OR CRYPTOGRAPHY
- DRUG DESIGN
- OPTIMIZE THE ENERGY GRID
- FRAUD DETECTION IN FINANCIAL MARKETS

## Quantum Sensing

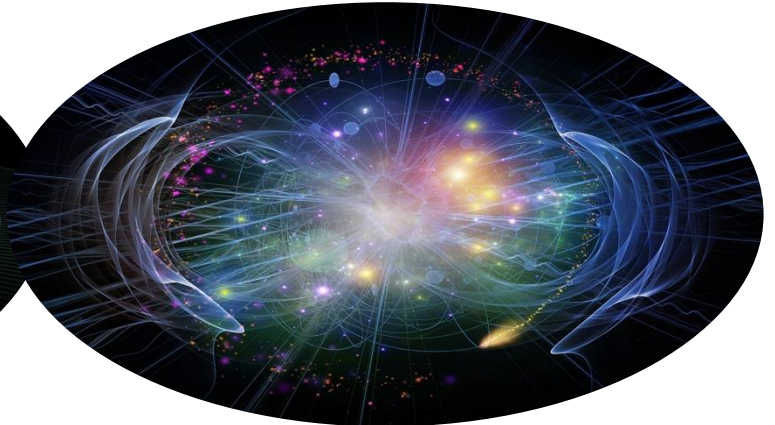
Atomic level sensors that will greatly enhance sensing capabilities



- GPS DENIED NAVIGATION
- ENHANCED BIOLOGICAL SENSORS
- MINERAL AND OIL EXPLORATION

## Quantum Communication

Provable secure communication and new communication protocols



- THE QUANTUM INTERNET
- ULTRA-SECURE COMMUNICATIONS
- ENERGY EFFICIENT COMMUNICATIONS

# Traditional Academic Pathways

- Quantum Programs in CNM's Schools of:

- Business Hospitality and Technology (CS)

- Quantum Computer Technician Certificate
      - CSCI 1710: Survey of Quantum Computing (4Cr)
      - CSCI 2710: Quantum Algorithms (4Cr)
      - CSCI 2720: Quantum Hardware (4Cr)

- Math Science and Engineering (Engineering Tech)

- Photonics Engineering Tech Certificate
      - ENGT 1012: Material Science (3Cr)
      - ENGT 1020: Optics (3Cr)
      - ENGT 2020: Lasers and Photonics (4Cr)

- Skilled Trades and Arts (Mechatronics)

- MECH xxxx: Fundamentals of Vacuum System Technology
      - MECH xxxx: Vacuum System Troubleshooting and Leak Detection
      - MECH xxxx: Advanced Vacuum Systems

- Designed as a direct Credit for Prior Learning pathways from the CNMI Quantum Technician Bootcamp

