

Workforce Training: Quantum Technician



Kyle Lee
CEO, CNM Ingenuity
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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



Where Are They Now

- Qunnect (2) – Quantum Networking
- Quantinuum (1 + several interviewing) – Quantum Computing
- Bandelier Technologies – Quantum Sensing
- Monarch Quantum (1 + 1 interviewing)– Laser Light Sources
- AV / Blue Halo – Space / Defense
- Emily Griffith Technical College – Education
- Continuing their education towards AS/BS degrees (3)

Interviewing:

- Vescent – Lasers / Atomic Clocks
- Leidos – Directed Energy
- Space Dynamics Labs – Quantum Sensing
- Los Alamos National Labs



Recognized National Leader in Quantum Workforce Training

CNM is Workforce Co-Lead
Elevate Quantum Tech Hub



CNM In?enuity, Inc.




NM and National Companies Supporting and Recruiting Students























Only Community College in Quantum Systems Accelerator


















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



Graduate Spotlight – Sergio Arvizu

- Born and Raised in Albuquerque
- Married for 5 years
- 2-year-old son
- Full time student
- Army Veteran
- Hired by



Thank You for your support of Congressional Designated Spending requests

Sen. Heinrich is sponsoring:

- \$533k for Public Service Upgrades
- \$1.280M for Hypersonics Training Program

Sen. Lujan is sponsoring:

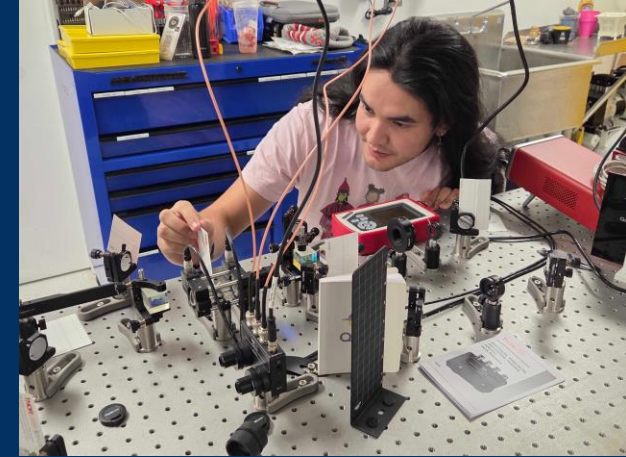
- \$2M for Air Traffic Control Programming
- \$1.264M for Quantum Networking



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*

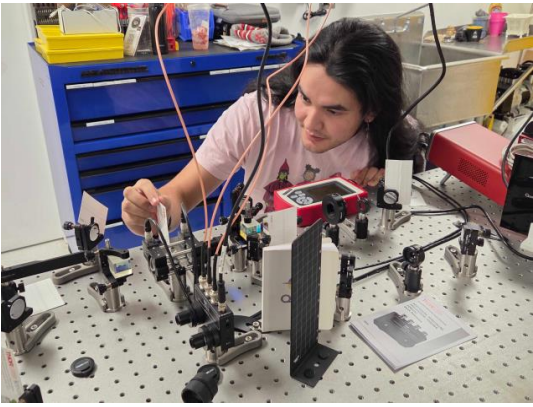


- **Faculty/Instructor Stipends – Hard-to-Fill Programs**

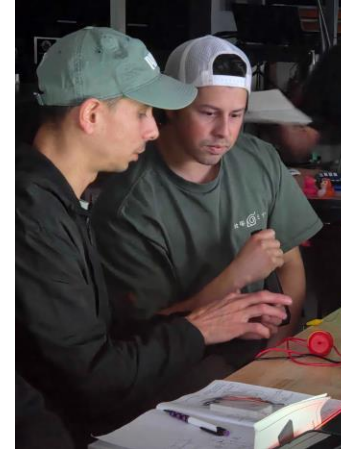
- *Target critical shortage areas (quantum, cybersecurity, trades)*
- *Close industry–academic pay gap to recruit/retain talent*
- *Launch and scale stipend model tied to workforce outcomes*

- **Faculty/Instructor Endowments**

- *Create sustained funding for high-demand faculty positions*
- *Leverage state investment with private/industry match*
- *Anchor long-term talent pipelines in key sectors*



Questions



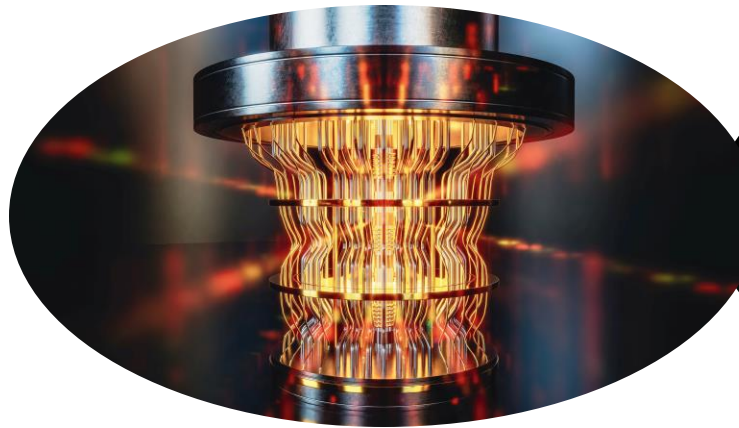
Back-up Material



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

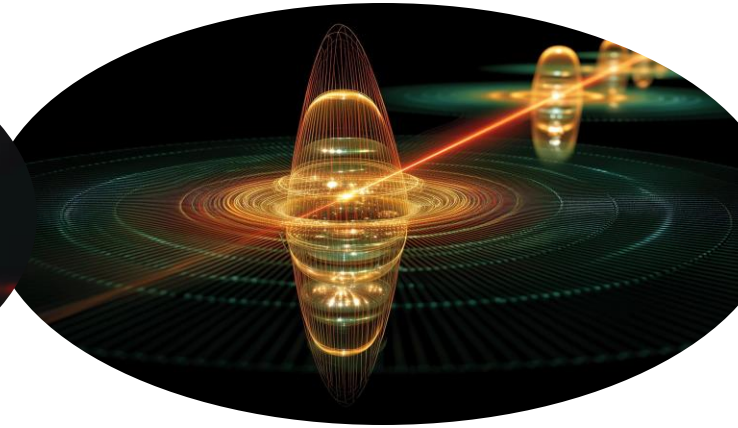
DRUG DESIGN

OPTIMIZE THE ENERGY GRID

FRAUD DETECTION IN FINANCIAL MARKETS

Quantum Sensing

Atomic level sensors that will greatly enhance sensing capabilities



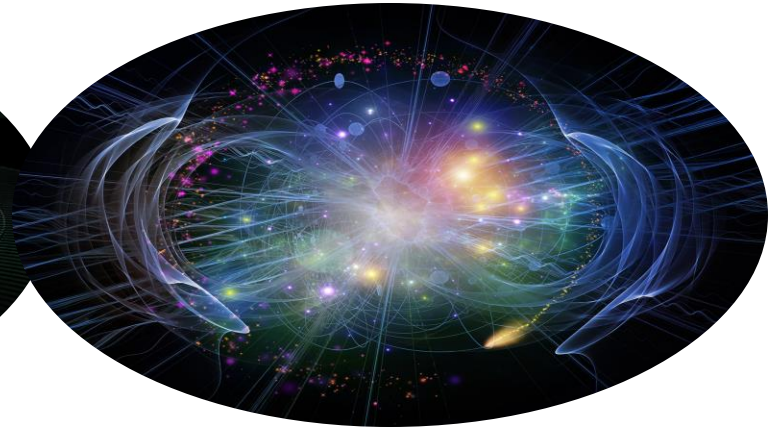
GPS DENIED NAVIGATION

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

