**DUE 12/17**

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**PROPOSAL STATEMENT OF WORK**

**Sandia National Laboratories**

**Introduction/Background**

Elevate Quantum – INCLUDE: Regional Technology and Innovation Hubs

Elevate Quantum’s (EQ) INCLUDE component positions EQ to emerge as the leading Quantum

Information Technology (QIT) ecosystem by fostering an industry-led, diverse, skilled, and inclusive workforce. INCLUDE, is led by co-applicants University of Colorado Boulder /

NCWIT and CNM Ingenuity.

INCLUDE will address systemic biases by deploying proven approaches in collective impact and inclusion to implement a full ecosystem (rising and graduating HS seniors through career) workforce strategy that considers the emerging nature of the quantum industry.

INCLUDE will be guided by the Elevate Quantum Workforce Collaborative (EQWC), an action-oriented collective of quantum experts, educators, and industry professionals essential to building a generative, sustainable, and inclusive ecosystem.

During the review approval process with the EDA, a concise SOW for INCLUDE was created and approved by the EDA. The funded objectives, anticipated implementation and impact metrics, and key activities of this grant as documented in the approved SOW are summarized below.

* Objective A: Closing the Gap for Non-Degree Holders through Flexible Skills Development
  + Anticipated Metrics:
    - Implementation: 20+ groups and institutions engaged in QIT upskilling, reskilling, and credentialing programs by 2029
    - Implementation: 20+ new instructors trained (including inclusive practices) and delivering quantum technician and QIT related offerings for non-degree holders
    - Implementation: 3+ novel and scalable technician training programs across the Mountain West
    - Impact: 10,000 engaged in QIT pathways (training, reskilling, awareness)
  + Key Activity 1: Quantum Learning Lab (QuLL)

Establish QuLL program at CNM-I to provide practical,

hands-on training that blends practical experience with theoretical knowledge

and helps fill quantum workforce gaps.

* + Key Activity 2: Rapid Skills Building Training Programs: Build quantum and digital skills for tertiary and postsecondary non-degree holders including 'learn as you earn' opportunities.
* Objective B: Increase Access for Underserved Groups through Inclusive Practices and Programs Anticipated Metrics (Implementation and Impact)
  + Anticipated Metrics
    - Implementation: 20+ inclusive training and workshops led by INCLUDE for EQWC members
    - Implementation: 10+ career fairs connecting EQWC members to diverse talent
    - Impact: 30% of EQWC workforce are from populations that are underrepresented in the Quantum industry by 2029
    - Implementation: 20+ high schools offering career-aligned QIT modules (400+ seniors/rising on pathways to QIT degree, apprenticeship or internship), disaggregated participation metrics (urban, rural, BIPOC, etc.)
    - Impact: 35+ industry and post-secondary partners trained and implementing inclusive educational, research, and hiring practices
    - Impact: 100,000 students/educators reached via various channels by 2029
  + Key Activity 1: Inclusive Practice Programs with EQWC: Attract/nurture diverse talent through inclusive workforce inclusion programming.
  + Key Activity 2: Accelerating Programs for Under-resourced Communities: Create pathways for rural and urban underserved high school and non-degree holders in CO and NM to access quantum education and career pathways.

**Scope of Work Context and Format**

As a part of the Elevate Quantum – INCLUDE: Regional Technology and Innovation Hubs, Sandia National Laboratories will be supporting the goals of Elevate Quantum INCLUDE as a subawardee to the University of Colorado/ NCWIT, the Elevate Quantum INCLUDE organization and the CNMI organization. Although both organizations are co-applicants, EDA has requested that University of Colorado/NCWIT serve as the single point of contact for the grant with respect to compliance and reporting. As part of the original proposal process most of the sub awardees submitted a draft SOW to the University of Colorado. It’s time we now **align these with the funded work as detailed in the EDA funded SOW** (which is only described briefly above), and assure we have a complete set of SOWs including those from CNM-I. We will be asking for updates on a yearly basis.

***Note - we’d like these to be as concise and specific as possible and we understand that things will surely change over time. Two to three pages should be sufficient in most cases.***

* **Narrative**

This effort will launch a technician training bootcamp in 2025 which will provide hands-on training necessary for participants to immediately enter the workforce as quantum technicians. The Quantum Learning Lab (QuLL) program at CNM-I will provide practical, hands-on training that blends practical experience with theoretical knowledge and helps fill quantum workforce gaps.

* **Key Deliverables**

Key deliverables include the launch of the first bootcamp in September 2025 at CNM-I. Sandia will support this effort by providing subject matter expertise in the field of quantum science and guidance including (but not limited to) suggesting topics, curricula, activities, desired knowledge/skills/abilities, and relevant technologies to be included in the training. This applies to Objective A, Key Activity 1. It will contribute to the following metrics:

**Implementation:** SNL and CNM-I engaged in QIT upskilling program; 2 new instructors trained and delivering technician offerings for non-degree holders; 1 novel and scalable technician training program in NM

**Impact:**  16 students engaged in QIT pathways

* **Existing Assets**

For this effort, we will leverage the existing SNL-led QCaMP program, which has curriculum that has been utilized to introduce high school and community college students to quantum concepts through project-based learning. This curriculum and activities can also be applied to non-degree holders.

* **Budget and Budget Narrative** (see attached)

## **Period of Performance**

The period of performance for this statement of work is Y1

Y1- October 1, 2024- September 30, 2025

## **Points of Contact:**

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## **Schedule of Deliverables**

Deliverables for the project are detailed in the table below. Deliverables include

products, events, tasks, activities, etc. that are aligned with objectives and key activities funded by the Elevate Quantum INCLUDE grant. Items in this SOW also align to the budget and include an expected timeline for completion.

|  |  |  |  |
| --- | --- | --- | --- |
| Deliverables (program, event, action) | Anticipated Impact Metrics/ Implementation Metrics | Objective and Key activity met | Y1 Timeline/Deadline/  Due Date |
| Support launch of QuLL by providing subject matter expertise and guidance for hands-on training and curriculum | **Implementation:** SNL and CNM-I engaged in QIT upskilling program;  2 new instructors trained and delivering technician offerings for non-degree holders;  1 novel and scalable technician training program in NM  **Impact:**  16 students engaged in QIT pathways | Launch first quantum technician training bootcamp in September 2025 | 10-week bootcamp launched by September 2025 |
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| Participate in monthly Elevate Quantum INCLUDE meetings |  |  |  |
| Complete requests for inputs and information in  support of bi annual Elevate Quantum INCLUDE progress reports and EQ Consortium baseline surveys for the EDA |  |  | Ongoing throughout the performance period. |
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