

Navajo Nation Clinical Laboratory Science Workforce Pipeline Program
Building a Sustainable Laboratory Workforce Through Education and Paid Clinical Training

Submitted by:
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Mr. Clayton Fulton
Chief of Staff
Indian Health Service
U.S. Department of Health and Human Services

Dear Mr. Fulton,

Enclosed is the proposal titled *Navajo Nation Clinical Laboratory Science Workforce Pipeline Program*. This proposal outlines a comprehensive, five-year initiative designed to address persistent laboratory workforce shortages across Navajo Nation healthcare facilities.

Clinical laboratory services are essential to diagnostic accuracy, chronic disease management, and emergency response. However, national data and local experience confirm that rural and tribal health systems face some of the highest vacancy rates in the country. This proposal presents a sustainable, community-centered solution that integrates paid clinical training, academic partnerships, and structured career pathways to strengthen the laboratory workforce from within.

The requested investment of \$5,812,950 over five years will establish a replicable workforce model that reduces reliance on temporary staff, strengthens diagnostic capacity, and expands career opportunities for Navajo students. The enclosed document provides background, implementation steps, measurable outcomes, and detailed budget justification.

We appreciate your consideration of this initiative and welcome the opportunity to discuss how this partnership can strengthen healthcare infrastructure across Navajo Nation.

Sincerely,
Nicole Parham

Executive Summary

The Navajo Nation faces persistent shortages of qualified Clinical Laboratory Science (CLS) professionals, resulting in increased diagnostic turnaround times, higher reliance on temporary contract staff, and reduced workforce stability across Indian Health Service and tribally operated facilities. National workforce assessments confirm that laboratory vacancy rates remain elevated, with rural and tribal systems experiencing the most severe recruitment challenges.

This proposal seeks \$5,812,950 over five years to implement the Navajo Nation CLS Workforce Pipeline Program, a structured, community-centered initiative designed to strengthen the local laboratory workforce. The program integrates academic partnerships, paid clinical rotations within Navajo Nation facilities, scholarship support, and competency-based training aligned with national certification standards.

The primary objective is to increase the number of Navajo students entering accredited CLS programs, completing clinical training within Navajo Nation, achieving ASCP certification, and transitioning into long-term employment within tribal and IHS laboratories.

Key program components include:

- Formal partnerships with NAU, UNM, and San Juan College
- Paid clinical training within Navajo Nation facilities
- Preceptor capacity expansion
- Student scholarships and exam support
- Workforce tracking and retention strategies

Over five years, the program will:

- Expand clinical training capacity
- Increase student retention and certification rates
- Reduce laboratory vacancy rates
- Improve diagnostic service stability

This initiative advances sustainability, health equity, and tribal self-determination by investing in local capacity development. By building a stable, culturally grounded CLS workforce, Navajo Nation can reduce dependency on temporary staffing models and ensure long-term diagnostic excellence.

Introduction

Clinical laboratory services are essential to every component of modern healthcare, yet many rural and tribal health systems, including those across the Navajo Nation (NN), face critical shortages of qualified laboratory professionals. National data shows that U.S. clinical laboratories continue to face persistent staffing shortages, with vacancy rates commonly exceeding 8% in core testing departments (Strain et al., 2019). Recent national workforce analysis reveals vacancy rates exceeding 20% for key laboratory positions, with rural and tribally operated facilities reporting some of the most persistent and difficult to fill openings (Garcia et al., 2025). These shortages directly affect the quality and timeliness of patient care. When laboratory staffing is insufficient, test processing slows, diagnostic turnaround times increase, and facilities become more dependent on costly external laboratories or temporary contract staff to maintain essential operations.

The impact of these shortages extends well beyond daily clinical workflow. The U.S. Government Accountability Office (GAO) has cautioned that chronic understaffing in tribal healthcare settings threatens the viability of core clinical services, creating operational instability and limiting access to timely diagnosis and treatment (U.S. GAO, 2022). This impact becomes apparent when testing is delayed and subsequently reporting results is also extended. The challenge is made more complex by geographic isolation, limited local training opportunities, and the financial and cultural barriers that Native students experience when required to leave their communities for unpaid, distant clinical rotations.

At the same time, interest in healthcare careers among Navajo students remains strong (King et al., 2024). Many are eager to pursue roles in Clinical Laboratory Science (CLS) but lack pathways that allow them to complete required training within their home communities. Without accessible, culturally grounded, and financially supported training options, students often discontinue their studies or pursue careers outside the laboratory field. This contributes to a cycle in which local facilities struggle to recruit and retain qualified staff, relying heavily on traveling professionals whose high cost and limited tenure make long-term workforce stability difficult to achieve.

Investing in a locally based CLS Workforce Pipeline Program offers a realistic, sustainable, and culturally aligned solution to this long-standing challenge. Community-centered training models have demonstrated strong success in improving retention in other rural and tribal health professions by allowing students to learn, practice, and build professional relationships where they intend to work. By establishing structured partnerships between academic institutions and NN healthcare facilities, providing paid clinical experiences, developing preceptor capacity, and implementing a competency-based training framework, the proposed program strengthens the laboratory workforce while expanding meaningful educational opportunities for Navajo learners (see Figure 1).

The program also advances broader goals of health equity and tribal self-determination. A stable, locally trained laboratory workforce enhances the reliability and quality of diagnostic services, reduces dependence on traveling staff, and ensures that patient care is delivered in a manner that honors cultural values and community priorities. Through this proposal, the NN seeks to implement a comprehensive and sustainable approach to workforce development that improves healthcare access, strengthens community capacity, and builds a foundation for long-term laboratory professional excellence.

Figure 1

Navajo Nation CLS Workforce Pipeline Model

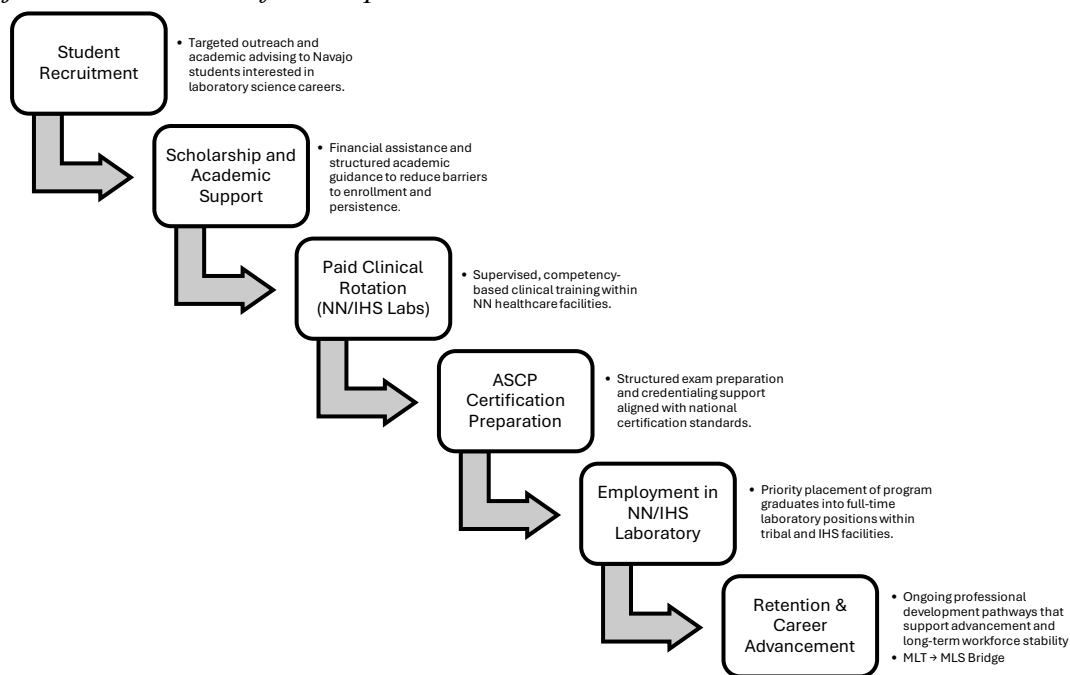


Figure.7j.Integrated.model linking education?paid.clinical.experience?certification?and.long_term.employment.within.NN.healthcare.systems;

Background

The Navajo Nation continues to experience significant shortages in Clinical/Medical Laboratory Science (CLS/MLS) professionals, affecting both the quality and timeliness of diagnostic services across Indian Health Service (IHS) and tribally operated healthcare facilities. These shortages directly impede clinical decision-making, public health surveillance, and emergency response capacity. Recent national workforce data confirm that vacancy rates in the U.S. medical laboratories remain elevated, with many departments experiencing ongoing hiring challenges, long time-to-fill periods, and imminent retirements that will continue to strain the workforce (Garcia et al., 2025; Health Resources and Services Administration [HRSA], 2024). These pressures are particularly acute in rural and tribal health systems, where recruitment barriers are strongest.

The geographical and rural nature of the Navajo Nation creates unique challenges for recruitment and retention of laboratory professionals. The geographic isolation limits access to qualified laboratory professionals within the Navajo Nation. The rural settings face challenges in recruiting and retaining clinical staff due to distance from major training centers, limited housing availability, and professional isolation, all of which reduce workforce stability (Weichelt et al., 2025). These barriers compound the chronic recruitment and retention difficulties already documented across Indigenous and IHS operated systems.

Students pursuing the CLS profession encounter additional structural barriers, including limited access to NAACLS accredited programs and restricted availability of clinical rotations in Navajo Nation facilities. These educational challenges reflect the broader inequities American Indian and Alaska Native (AI/AN) students experience when attempting to enter health professions, including financial constraints and limited institutional support (King et al., 2024).

Financial burdens also influence entry into the CLS workforce. Many Navajo students face high tuition costs, transportation expenses, temporary relocation needs for clinical placements, and licensing or certification exam fees. These factors disproportionately affect rural and Indigenous populations and suppress entry into laboratory professions (King et al., 2024; HRSA, 2024). For instance, average tuition for CLS programs in the Southwest ranges from \$18,000-\$28,000 annually, while relocation for clinical rotations can require an additional \$6,000-\$10,000 in temporary housing and transportation costs (HRSA, 2024). These expenses are cost prohibitive financial burdens for many Navajo students.

These workforce and educational barriers produce direct consequences for patient care and public health. Laboratory understaffing delays diagnostic turnaround times, slows treatment decision-making, and undermines management of chronic diseases such as diabetes and cardiovascular illness, conditions with higher prevalence in Navajo communities. Public health surveillance is also weakened, as limited laboratory capacity slows outbreak detection, reporting and coordinated response (Grabiner, 2024).

At the same time, national health organizations continue to highlight the urgent need to invest in Indigenous health workforce development. Post-pandemic instability and continued vacancy challenges across Indian Country further heighten the need for structured educational and clinical training pathways (Grabiner, 2024). Emerging partnerships between the Navajo Nation Department of Health (NNDOH), IHS facilities, and regional CLS education programs provide a timely opportunity to establish a sustainable workforce pipeline. Federal workforce projections also emphasize that investment in recruitment, training, and retention is essential for improving access and outcomes in underserved communities (HRSA, 2024). Additionally, the increased national focus on health equity and Indigenous workforce development provides momentum for initiatives that strengthen local capacity, reduce dependency on external contract staff, and promote culturally grounded healthcare delivery.

Collectively, these factors clearly demonstrate the urgent need for a comprehensive CLS workforce pipeline program specifically tailored to the Navajo Nation. The current conditions highlight both the necessity and feasibility of developing a sustainable, community centered approach to laboratory workforce development that strengthens diagnostic capacity across Navajo communities.

Project Plan

Building upon the documented workforce shortages, educational barriers, and systemic challenges described in the Background section, the Navajo Nation CLS Workforce Pipeline Program proposes a structured, multi-phase plan designed to expand access to CLS education, strengthen clinical training capacity, and develop a sustainable laboratory workforce. This project plan aligns with best practices in workforce development, rural health recruitment, and Indigenous student support, reflecting federal workforce findings (HRSA, 2024), national vacancy patterns (Garcia et al., 2025), and evidence on educational barriers facing American Indian/Alaska Native (AI/AN) learners (King et al., 2024).

1. Project Objectives

Primary Objective

To establish a sustainable CLS workforce pipeline that increases the number of Navajo Nation (NN) students entering accredited CLS programs, completing clinical training within NN health systems, and obtaining long-term employment in tribal and IHS laboratories. The target is to make a measurable reduction in the current IHS agency-wide vacancy rate of approximately 30% by at least 15 percentage points within participating NN facilities by the end of Year 5 (IHS, 2026).

Secondary Objectives

1. Enroll a minimum of 9 students annually in the pipeline program, with a target of 12 students per cohort by Year 3, for a cumulative total of no fewer than 45 students over five years.
2. Achieve an ASCP first-time pass rate of 85% among program graduates by Year 3, rising to 90% by Year 5, compared to the current national average of approximately 75-80%.
3. Retain at least 60% of program graduates in NN or IHS laboratory positions two years post-graduation, measured through the program's workforce tracking system.
4. Expand clinical training capacity by establishing a minimum of three fully credentialed rotation sites within NN health facilities by the end of Year 2, with at least six active preceptors trained and compensated, and reduce reliance on contract laboratory staff at participating NN/IHS facilities by at least 20% by Year 5.

These objectives directly address the root causes identified in national datasets documenting persistent workforce shortages (Garcia et al., 2025) and structural obstacles limiting the AI/AN health professions pipeline (King et al., 2024).

2. Major Steps and Activities

The project consists of four major steps, each supported by actionable minor steps designed to address underlying workforce challenges experienced in rural and tribal settings (Weichelt et al., 2025).

Major Step 1: Build and formalize strategic partnerships.

Purpose

To create a unified educational and clinical infrastructure that supports CLS student recruitment, training, and placement across NN.

Activities

1. Develop MOUs between NNDOH, IHS laboratories, NAU, UNM, and San Juan College.
2. Establish a workforce pipeline advisory council.
3. Align clinical and academic components with NAACLS accreditation and NN/IHS policies.

Major Step 2: Implement a comprehensive student support and funding system.

Purpose

To eliminate financial, academic, and structural barriers that limit Navajo student participation in CLS education.

Activities

1. Provide scholarships and stipends for tuition, supplies, transportation, and housing.
2. Establish culturally responsive academic support systems.
3. Offer ASCP exam preparation resources and fee assistance.

Major Step 3: Expand clinical training capacity across NN laboratories.

Purpose

To ensure that students can complete rotations within NN, reducing relocation needs and strengthening local laboratory capacity.

Activities

1. Provide workload offsets and preceptor stipends.
2. Develop standardized rotation curricula.
3. Equip laboratories with training and evaluation materials.

Major Step 4: Strengthen workforce placement, career pathways, and retention.

Purpose

To support graduate transition into stable employment and long-term retention

Activities

1. Develop job placement agreements prioritizing program graduates.
2. Create an MLT-to-MLS bridge pathway.
3. Implement a workforce tracking system.

3. Implementation Timeline

Year 1: Foundation Building

- Execute MOUs
- Convene Advisory Council
- Recruit student cohort
- Prepare clinical sites

Years 2-3: Expansion and Training

- Students complete coursework and rotations
- Bridge pathway launches
- First graduates take ASCP certification

Years 4-5: Workforce Stabilization

- Graduates enter CLS positions
- Vacancy rates decrease
- Program institutionalizes

4. Evaluation Plan

Program evaluation will follow a Logic Model framework linking inputs, activities, outputs, and outcomes across the five-year project period. Annual evaluations will be conducted by the Data/Evaluation Specialist and reviewed by the Workforce Pipeline Advisory Council. A summative evaluation will be completed in Year 5 and submitted to IHS as part of final reporting requirements. The following metrics and methods will be used to assess progress toward each program objective.

- Enrollment and Retention: The Program Coordinator will maintain a student tracking database recording enrollment, academic progress, rotation completion, and attrition, reviewed quarterly. Target: minimum 9 students enrolled annually, reaching 12 per cohort by Year 3, for a cumulative total of no fewer than 45 students over five years.

- ASCP Certification Outcomes: ASCP BOC pass/fail results will be collected for all graduates within six months of program completion and calculated annually beginning Year 3. Target: 85% first-time pass rate by Year 3, rising to 90% by Year 5.
- Employment and retention: A two-year post-graduation employment survey will be administered to all graduates, cross-referenced against NN/IHS HR records annually. Target: 60% of graduates retained in NN or IHS laboratory positions at two years post-graduation.
- Clinical Capacity Expansion: Number of credentialed rotation sites and trained preceptors tracked by the Clinical Training Liaison and reported semi-annually. Target: minimum three fully credentialed rotation sites and six trained preceptors established by end of Year 2.
- Vacancy Reduction: Baseline vacancy data established Year 1 through direct coordination with NN/IHS laboratory directors, with annual facility-level vacancy counts tracked through Year 5. Annual contract staffing expenditures collected from NN/IHS administrative records to measure reduction in temporary staff reliance. Target: at least 15 percentage point reduction in CLS vacancy rates and 20% reduction in contract staffing at participating facilities by Year 5.
- Reporting Timeline: Quarterly internal progress reports to the Advisory Council; annual performance reports submitted to IHS; a mid-project evaluation in Year 3 assessing progress toward certification and enrollment targets with recommendations for program adjustments, and a comprehensive summative evaluation in Year 5 covering all objectives, outcomes, and sustainability indicators.

5. Sustainability Plan

Long-term sustainability of the NN CLS Workforce Pipeline Program is grounded in a clear financial logic: the cost of training and retaining a locally employed CLS professional is substantially lower than the ongoing cost of contract staffing. Current travel CLS contract rates average \$2,615 to \$2,849 per week, or approximately \$136,000 to \$148,000 annually per position when agency fees, housing stipends, and onboarding costs are included (Aya Healthcare, 2026; ZipRecruiter, 2025). By contrast, a permanent employed CLS professional in rural Arizona or New Mexico earns approximately \$55,000 to \$65,000 annually including benefits, less than half the cost of a contract position. Each permanent local hire generated by this program therefore represents an estimated savings of \$70,000 to \$85,000 per year to NN/IHS facilities. With a target of 45 graduates over five years and a 60% two-year retention rate, the program is projected to place approximately 27 permanent CLS professionals within participating NN/IHS facilities by Year 7. At a conservative savings estimated of \$70,000 per replaced contract position, this represents a potential annual workforce cost reduction of approximately \$1,890,000, exceeding the program's average annual operating cost and generating a positive return on investment within the grant period.

- **Post-Grant Budget Integration:** Beginning in Year 3, NNDOH and IHS facility administrators will incorporate program operational costs into annual budget planning cycles. Personnel costs for the Program Coordinator and Clinical Training Liaison will transition to NNDOH operational budgets by Year 5, supported by documented reductions in contract staffing expenditures.
- **Ongoing Scholarship Funding:** Student scholarships and stipend funding will be pursued through continuing federal sources including HRSA workforce development grants, Indian Health Scholarship Program funding, and tribal scholarship programs administered by NNDOH, ensuring student support continues beyond the grant period.
- **Academic Partnership Continuity:** Formal MOUs with NAU, UNM, and San Juan College will be structured as multi-year agreements extending beyond the grant period. These institutions have independent accreditation and operational incentives to maintain the pipeline, as it expands AI/AN student enrollment and strengthens their NAACLS-required clinical rotation infrastructure.
- **Internal Pipeline via MLT-to-MLS Bridge:** The MLT-to-MLS bridge pathway, launching in Year 2, creates a self-sustaining mechanism for workforce development that does not depend on external grant funding. NN/IHS facilities can continue growing their laboratory workforce from within using standard professional development budgets, independent of future grant cycles. Annual evaluation data will be used to refine program activities and document return on investment for future funding applications.

Qualifications Section

The successful implementation of the NN CLS Workforce Pipeline Program requires an experienced, culturally grounded, and technically competent team. The organizations and partners involved in this initiative bring substantial expertise in healthcare delivery, laboratory operations, higher education, workforce development, and community-centered program administration. The qualifications of the program partners demonstrate both the capability and capacity to implement a multi-year, multi-institutional pipeline that addresses the structural barriers identified in the Background and Project Plan.

Navajo Nation Department of Health (NNDOH)

The NNDOH is uniquely positioned to lead this initiative due to its long-standing role in overseeing public health programming, tribal health system coordination, and health workforce development across the NN. Its experience implementing community-based health programs ensures that the CLS pipeline will be aligned with NN priorities, cultural values, and workforce needs. For example, NNDOH successfully implemented the Community Health Representative (CHR) workforce expansion initiative, which improved service coverage across remote chapters and demonstrated the department's ability to coordinate training, staffing, and multi-year program management (IHS, 2023). NNDOH brings:

- Expertise in tribal health workforce planning and administration
- Strong relationships with IHS, tribally operated facilities, and regional healthcare systems
- Capacity to manage grant-funded projects, data oversight, and interdepartmental coordination
- Direct knowledge of local healthcare access challenges and diagnostic service needs

NNDOH's leadership ensures the program reflects a community-driven and culturally supported approach consistent with AI/AN workforce development research (King et al., 2024).

Indian Health Service (IHS) and Tribally Operated Laboratories

IHS and tribal laboratories across NN have decades of experience in delivering diagnostic services, training preceptors, and managing laboratory operations in rural environments. Their qualifications include:

- Certified and accredited clinical laboratories with established quality systems
- Experienced MLS, MLT, and supervisors who can serve as clinical preceptors
- Demonstrated capacity to mentor students in microbiology, hematology, chemistry, and transfusion services
- Direct engagement in national workforce shortage initiatives and laboratory vacancy mitigation strategies (Garcia et al., 2025)

These laboratories are crucial training sites for clinical rotations and will provide the direct experience required for students to become competent, certified CLS professionals.

Academic Partners (NAU, UNM, San Juan College, and other accredited CLS Programs)

Partnering academic institutions brings essential qualifications in curriculum design, accreditation compliance, and student progression. These programs:

- Maintain NAACLS-accredited CLS/MLS curricula
- Possess experienced faculty with expertise in laboratory medicine, student advising, and competency-based education
- Have documented success in preparing students for ASCP certification
- Provide hybrid and in-person instructional models that accommodate rural and Indigenous learners

Their inclusion ensures academic rigor, program integrity, and clear pathways from coursework to clinical training and certification.

Program Governance and Advisory Structure

The Workforce Pipeline Advisory Council is composed of NNDOH leadership, IHS laboratory managers, academic faculty, tribal leaders, and community members. This council brings:

- Policy guidance and strategic oversight
- Cross-sector expertise in laboratory science, higher education, and public health
- Commitment to culturally responsive and community-informed decision-making
- A collective capacity to ensure programming accountability, responsiveness, and continuous improvement

The collaborative governance structure aligns directly with federal recommendations for improving rural and tribal workforce retention (HRSA, 2024; Weichelt et al., 2025).

Specialized Program Personnel

The program will be staffed by individuals with technical, administrative, and educational qualifications essential for successful implementation:

Program Coordinator

- Background in public health, laboratory science, or health program administration
- Experience in managing multi-site programs and student support systems
- Ability to oversee program logistics, data reporting, and stakeholder coordination

Clinical Training Liaison

- MLS or MLT credentialed professional with supervisory or preceptor experience
- Expertise in NAACLS competencies and clinical site coordination
- Skilled in developing and monitoring student rotation schedules and evaluations

Student Success & Mentorship Lead

- Experience supporting Native students in health professions programs
- Training in culturally responsive mentoring and student retention strategies

Data and Evaluation Coordinator

- Skilled in quantitative and qualitative data analysis
- Experience using workforce metrics (vacancy rates, certification outcomes, retention)
- Ensures accountability to funders and supports evidence-based improvement

Organizational Capacity and Readiness

The combined qualifications of NNDOH, IHS laboratories, academic partners, and advisory members create a uniquely capable system with:

- Existing infrastructure for delivering health, laboratory, and education services
- Strong relationships needed to sustain multi-year workforce development
- Proven ability to manage federal, tribal, and philanthropic funding

- Direct alignment with national workforce priorities and documented shortages (Garcia et al., 2025; HRSA, 2024; Grabiner, 2024)

This integrated capacity ensures that the proposed pipeline program can be implemented effectively, sustainably, and with measurable impact.

Project Budget

The total budget to implement the NN CLS Workforce Pipeline Program over five years is \$5,812,950.00 This budget reflects a comprehensive and carefully planned investment in personnel, clinical training capacity, infrastructure, student support, and administrative oversight necessary to establish and sustain locally grounded workforce pipeline. All projected costs are reasonable, allocable, and consistent with federal Uniform Guidance (2 CFR 200) requirements.

1. Personnel – Total: \$2,145,600

Personnel costs total \$2,145,600 over the five-year project period and represent the core operational investment in the program. These funds support three essential positions:

- **Program Coordinator (Level Two):** Responsible for day-to-day operations, site coordination, student support, scheduling, and communication.
- **Clinical Training Liaison/Director (Level One):** Oversees clinical training alignment, direction over project progress, preceptor engagement, competency development, and quality assurance.
- **Data/Evaluation Specialist (Level Two):** Manages evaluation metrics, data reporting, compliance monitoring, and outcome analysis.

These roles are critical to ensuring that the program operates efficiently, meets accreditation standards, and produces measurable workforce outcomes. Personnel costs reflect a 40% fringe benefit rate, consistent with BLS 2024 Employer Costs for Employee Compensation (ECEC) and common tribal/public sector benefit structures.

2. Fringe Benefits – Total: \$858,240

Fringe benefits total \$858,240, calculated at 40% of salary in accordance with Bureau of Labor Statistics Employer Cost for Employee Compensation data and prevailing public-sector employment structures in rural Arizona and New Mexico. Fringe costs include health insurance, retirement contributions, payroll taxes (FICA/Medicare), workers' compensation, unemployment insurance, and paid leave. These benefits are necessary to recruit and retain qualified professionals capable of implementing a multiyear workforce development initiative in a rural environment.

3. Facilities – Total: \$325,000

Facilities costs total \$325,000 across five years and include building lease, retooling, depreciation, and insurance to support an administrative and training coordination office on or near Navajo Nation.

- **Building Lease:** Annual lease based on rural commercial space (1,000-1,200 sq ft).
- **Retooling:** One-time Year 1 for renovation and preparing space for program operations and training support.
- **Depreciation:** 30-year straight line depreciation applied to retooling costs.
- **Insurance:** Required property and liability coverage for facility operations.

These costs ensure adequate space for staff, training preparation, documentation storage, and partnership coordination. Investment in physical infrastructure ensures stable operations and program continuity within or near NN.

4. Equipment – Total: \$210,000

Equipment expenditures total \$210,000 over five years. It supports program operations, student oversight, and administrative needs.

- **Computer Hardware:** Laptops/desktops for program staff, replaced in Year 4.
- **Software:** Licenses for data management, evaluation, office tools, and student tracking.
- **Tools:** Training aids, small lab-related equipment, reagents and supplies, other competency materials.
- **Office Furniture:** Initial workstation setup for staff.
- **Depreciation:** Five-year straight-line depreciation applied per federal guidelines.

Equipment purchases directly support training quality, program administration, and evaluation.

5. Materials – Total: \$375,000

Materials costs total \$375,000 and include direct, indirect materials and documentation. These are aligned with program needs.

- **Direct Materials:** Training consumables (slide sets, reagents, PPE, QC kits, mock samples) required for CLS competencies.
- **Indirect Materials:** Office supplies, cleaning/safety materials, toner, and general operational supplies.
- **Documentation:** SOP binders, printed manuals, evaluation packets, and cloud storage.

These materials ensure students receive direct and competency-based training consistent with CLIA and NAACLS expectations.

6. Travel- Total: \$198,750

Travel costs total \$198,750 over five years. They support site visits, student monitoring, preceptor coordination, and partnership development across multiple clinical sites within NN and adjacent regions.

- **Mileage:** Based on GSA 2025 rate of \$0.67/mile.
- **Vehicle rental/fleet charge:** Federal SUV/4x4 vehicle due to conditions of roads and weather.
- **Lodging:** Only for extended-distance visits requiring overnight stays.
- **Meals & Incidentals:** Based on GSA per diem rate of \$59/day.

No air travel is included, as all program activities occur within a drivable region.

7. Training Costs – Total: \$420,000

Training costs total \$420,000 and support new-employee onboarding, CLIA-required technical competencies, safety training, quality assurance orientation, and preceptor directed skill development. Training ensures all trainees meet laboratory readiness standards and improve workforce retention.

- **Training Hours:** 260 hours per trainee (supported by ASCP/CLIA guidance).
- **Cost per Hour:** \$59/hr. (trainee + preceptor blended rate).

8. Hiring Costs – Total: \$61,000

Hiring costs total \$61,000 and cover HR processing, credential verification, background checks, interview coordination, onboarding administration, compliance documentation, and communication.

- **52 hours per hire x \$46.90/hr.**, based on a weighted average across HR roles. Hiring costs are necessary to onboard new CLS trainees and replace turnover in clinical sites.

9. Communications – Total: \$89,360

Communications expenditures total \$89,360 and include reliable access to phone, internet, printing, and recordkeeping systems to support program coordination.

- **Phone:** Two mobile phones and office landline.
- **Internet:** Rural broadband services needed for teleconferencing, documentation, and evaluation.
- **Postage:** Mailing agreements, onboarding materials, evaluation packets, and certified mail.
- **Documentation:** Digital cloud storage, printing maintenance, and secure backup systems.

These costs are essential for communication across the large geographic area served.

10. Indirect/Facilities & Administrative Costs – Total: \$1,130,000

Facilities & Administrative (F&A) costs support organizational overhead projections including accounting, HR functions, governance, reporting infrastructure, and administrative support. This proposal applies to the approved indirect rate to the Modified Total Direct Costs (MTDC).

The total five-year cost of the NN CLS Workforce Pipeline Program is \$5,812,950, reflecting the addition of conference travel support and student scholarships and stipends. This investment establishes a sustainable workforce development structure that reduces long-term dependence on temporary contract staff, strengthens diagnostic capacity, improves student retention, and enhances healthcare stability across NN facilities. The proposed budget reflects a strategic, responsible allocation of funds designed to produce measurable workforce outcomes and long-term system impact. Table 1 summarizes the five-year allocation of project funds across major categories.

Table 1. Five-Year Budget Summary

Category	Five-Year Total
Personnel	\$2,145,600
Fringe Benefits	\$858,240
Facilities	\$325,000
Equipment	\$210,000
Materials	\$375,000
Travel	\$198,750
Training	\$420,000
Hiring	\$61,000
Communications	\$89,360
Indirect (F&A)	\$1,130,000
Total Project Cost	\$5,812,950

Conclusion

Clinical laboratory services are foundational to effective healthcare delivery, and sustained workforce shortages threaten the stability of diagnostic systems across the NN. National assessments continue to emphasize that rural and tribal healthcare systems face some of the most significant barriers to recruiting and retaining qualified laboratory professionals (Garcia et al, 2025; U.S. GAO, 2022). Addressing these shortages requires more than temporary staffing solutions; it requires a long-term, community-centered strategy that builds local capacity and strengthens healthcare infrastructure from within.

The proposed CLS Workforce Pipeline Program offers a comprehensive and feasible path forward. By creating accessible, paid clinical training opportunities, building strong academic-clinical partnerships, developing preceptor capacity, and establishing clear competency-based training structures, the program is designed to produce a stable, highly skilled team of laboratory

professionals who can serve the Nation for years to come. This approach not only expands educational opportunities for Navajo students but also reduces long-term dependence on external contract staff, supports continuity of care, and strengthens the overall resilience of the healthcare system.

The projected five-year investment of \$5,812,950 represents a strategic allocation of resources toward sustainable workforce development. Moreover, investing in local workforce development contributes to broader goals of sovereignty, economic stability, and community wellbeing. A strong laboratory workforce enhances patient trust, supports culturally responsive care, and empowers Navajo youth to pursue meaningful careers in science and healthcare without leaving their communities. With clear deliverables, measurable outcomes, and a sustainable program structure, this proposal outlines a transformative opportunity to address a critical workforce need while reinforcing the long-term health and vitality of Navajo communities.

With established academic partnerships, defined implementation steps, structured evaluation mechanisms, and dedicated leadership, the program is ready for implementation. The framework is feasible, scalable, and responsive to documented workforce needs. By supporting this initiative, funders and directly responsive to documented workforce needs across the Navajo Nation.

Now is the time to move from shortage response to workforce sustainability. This program will transform diagnostic services across the Navajo Nation by building a homegrown CLS workforce that strengthens healthcare capacity, advances sovereign control of essential health services, and improves outcomes for future generations. By investing in this initiative, funders and partners invest in health equity, community resilience, and the long-term vitality of Navajo communities. The NN CLS Workforce Pipeline Program provides the structure, partnerships, and accountability, and measurable outcomes necessary to achieve that goal.

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