

<b>Contents</b>	<b>iii</b>
<b>SECTION A: SIGNIFICANCE</b>	<b>1</b>
A.1. Unmet Need Addressed by the Project .....	3
A.2. Potential Contributions of the Project.....	6
<b>SECTION_B. STRATEGY TO SCALE</b>	<b>7</b>
B.1. Strategies that Address Barriers that Prevent Reaching Scale.....	7
B. 2. Management Plan.....	13
B 3. Capacity to Implement VINE .....	17
B 4. Dissemination Strategies to Support Development and Replication. ....	19
B.5. Utility of Products and Effective Use in Multiple Settings. ....	20
<b>SECTION C: PROJECT DESIGN</b>	<b>23</b>
C.1. Conceptual Framework .....	23
C.2. VINE Goals, Objectives, Strategies, Outputs, Outcomes, and Measures.....	25
C.3. Project Design. ....	28
<b>SECTION D: PROJECT EVALUATION</b>	<b>30</b>
D.1. Evaluate the Impact of ASMP on NAK Statewide in AK (Goal 1, Objective 1).....	32
D.2. Evaluate Expansion Scaling Strategies (Goal 1, Objectives 2 and 3) .....	40
D.3. Conduct a pilot test of ASMP in MT (Goal 2, Objectives 4 and 5).....	40
<b>SUMMARY</b> .....	<b>41</b>
<b>REFERENCES</b> .....	<b>R1-R16</b>

## SECTION A: SIGNIFICANCE

High teacher turnover is one of the most challenging barriers to student success in schools serving traditionally underserved students. Teacher turnover in Alaska (AK) was over twice the nationwide average in academic year 2020–21 at 22% vs 10%<sup>88, 107</sup> with highest rates in rural/remote schools (31%, Appendix. J, Table. A.1).<sup>107</sup> First-day vacancies in AK more than doubled between 2019–20 and 2022–23, and the number of emergency certificates increased overall (Appendix. J, Fig. A.2) filling positions with underqualified teachers who have had little or no formal preparation. Teachers leave the education profession for reasons including poor leadership, geographic isolation, poor living conditions, failure to adapt to cultural differences, and lack of community/parent support.<sup>48, 49</sup> Fewer potential teachers are willing to relocate to AK than to other states<sup>94</sup> and this challenge is exacerbated by AK’s 2006 teacher retirement plan under which teachers are leaving at a higher rate than under the previous plan (Appendix. J, Fig. A.3), discouraging those who might be interested in pursuing education as a career or educators who might otherwise be interested in coming to AK to teach.<sup>36</sup>

This innovative scale-up and expansion proposal, the Validated Induction Network Expansion (VINE) project, expands the Alaska Statewide Mentor Project (ASMP). ASMP is a data-driven, intensive mentoring model based on the New Teacher Center (NTC) system<sup>93, 67</sup> of new teacher induction and support that has served first- and second-year Alaskan teachers since 2004<sup>1</sup>. Randomized controlled trials (RCTs) have demonstrated positive impacts of NTC’s induction model on student achievement in mathematics and English Language Arts (ELA).<sup>1, 22, 95</sup> ASMP has adapted the NTC model to meet the unique needs of AK teachers (e.g., new teachers from outside AK working in extremely remote communities with very small schools where the majority of students are Alaska Native). The key components of ASMP are based on research on teacher mentoring. These components include hiring high-quality, experienced Alaskan educators, intensive training in

mentoring best practices, using formative assessment tools designed to collect data that teachers use to develop pedagogical skills while becoming a reflective educator, and a confidential, non-evaluative approach to foster a trusting mentor/mentee relationship. Mentors collaborate weekly with their mentees to help them develop teaching practice as well as provide advice and emotional support. Mentors also visit the classrooms to conduct observations to collect data and provide feedback to the teachers. The effectiveness of the ASMP model in urban areas has been validated by an RCT, funded by an Investing in Innovation (i3) grant. Results demonstrated positive effects on teacher retention and student achievement with statistically significant impact on discrete groups of students (Native) and educationally significant influence of the mentoring program on teachers and their students (**Absolute Priority 1**).<sup>54, 107</sup>

ASMP (VINE by extension) is a field-initiated innovation (**Absolute Priority 2**): A teacher with a vision for putting a quality teacher in front of every Alaskan student partnered with the Alaska Commissioner of Education to secure funding to create ASMP. Districts agreed with this vision and supported the project by loaning teachers to become trained mentors. When the legislature later cut funding to ASMP due to a statewide budgetary crisis, school districts and the University of Alaska Fairbanks (UAF) committed funds so the project could continue serving new teachers, while the project itself responded to Requests for Proposals to secure funding and keep ASMP serving those newest to the profession for every AK student to have a quality teacher in the classroom. The value-added reputation of ASMP had been established and education stakeholders in AK have kept the mentoring model serving those newest to the profession. The need, however, has grown and now extends beyond those newest to the profession and by including teachers new to AK.

The Validated Induction Network Expansion (VINE) project will expand ASMP's mentoring eligibility through VINE's reach into rural and urban areas statewide and beyond, to address education's looming challenges of teacher quality and retention. VINE will take the critical step of evaluating mentoring effectiveness in retaining teachers who may not be new to the profession yet

are new to Alaska (NAK), including those international teachers new to the country. Further, to evaluate the effectiveness of VINE mentoring beyond Alaska, VINE will conduct a pilot study in Montana (MT), a state already taking steps to promote the inclusion of Native education in all grades and subjects.<sup>112</sup>

### **A.1. Unmet Need Addressed by the Project**

**A.1.1. Stemming the Tide of Teacher Turnover.** Many beginning and experienced teachers come to AK from out of state and abroad. Out of 1,000 teachers hired each year between 2013 and 2018, 600 to 840 were NAK.<sup>34, 40</sup> Teachers prepared outside of AK have higher turnover rates than their Alaskan peers (23% vs. 19% in 2020–21).<sup>48, 88, 107</sup> Teaching quality is the most important in-school factor in student learning, and teacher turnover negatively affects teaching quality.<sup>23, 40, 45</sup> Turnover also correlates with lower math and ELA performance, more disruptions in instruction, less experienced teachers, and more teachers without full licensure.<sup>26, 45, 53</sup>

Limited school district resources strain to support new teachers and recruit and train replacements.<sup>29, 93</sup> Teacher turnover costs the country \$7.3 billion annually and AK about \$22 million.<sup>23, 34</sup> It costs Chicago \$17,872 per teacher and costs AK \$20,431 per teacher.<sup>23, 34</sup> Districts struggling to hire certified educators have filled positions with emergency certificates, or potentially under-prepared teachers. Unsupported teachers unprepared to meet the challenges of teaching in Alaska become discouraged and leave the state and/or the profession, thereby continuing the expensive cycle of high teacher turnover. VINE proposes to support these teachers New to Alaska.

**A.1.2. Test Cost-Effective and Sustainable Solutions to Serve NAK Teachers.** Despite research-based evidence of effectiveness, an unstable fiscal climate has limited ASMP's reach (Appendix. J, Table. A.4). Over the past six years, ASMP has served 117 to 175 early-career teachers (ECTs) per year, fewer than 20% of available ECTs, compared to 24% in 2016–17, and 60-70% in 2014–15 and 2015–16. This leaves a majority of teachers, including those from out of state, both early-career and experienced, without the necessary support to manage AK's unique remote environment and culture.

The ASMP model includes weekly mentor-mentee interactions, monthly on-site, in-person mentoring when financially able, and this can require costly travel to remote areas. ASMP has successfully trained mentors to use distance-delivery technology to offset some travel costs, while maintaining the fidelity of the ASMP mentoring model. A key VINE goal is to implement a sustainable business model that provides resources for serving all NAK teachers using in-person and hybrid strategies.

**A.1.3. Supporting NAK to Serve Traditionally Underserved Students.** Students of color are less likely than peers to access consistent, high-quality education; they score lower on state assessments, drop out at higher rates, are more likely to report feeling disconnected from their schools, and experience a cultural mismatch with their teachers.<sup>22, 31</sup> Students benefit from adults with a similar culture<sup>33</sup>, and with the diversity in AK schools, teachers need training to be culturally competent to engage students and be effective educators.<sup>27, 29, 64</sup> AK has the highest American Indian/Alaska Native (AI/AN) student population in the nation (22% in 2021).<sup>100</sup> It should be noted that this figure is a statewide average and that most of the districts outside the major urban centers are majority Indigenous. That being said, the five urban districts serve most of AK's Native students as well as students of international backgrounds. Four of the top 10 most diverse public elementary schools in the US are in Anchorage<sup>75</sup> (the largest AK urban district) and in Juneau half of students are non-white (Appendix. J, Table. J.5). In addition to students of color, the state has almost 20,000 students in special education in 2022, and 9,000 English learners in 2021 (Anchorage students speak 110 different languages), who also often struggle to learn.<sup>4, 5, 20, 86</sup> Similar challenges exist in other states with significant Native populations.<sup>68, 76, 82</sup> UAF (the university where ASMP is based), is a minority-serving institution (**Competitive Preference Priority**) with a student body that is 21% AI/AN.<sup>37, 105</sup>

Since its inception, ASMP has worked to “Alaskanize” its mentoring model and infuse cultural awareness and relevance into mentor training. In turn, mentors help their mentees develop lessons and teaching practices that draw on the culture of their specific classrooms and communities to better engage students. See Appendix J for the two-year ASMP intensive mentor training. VINE

will continue these cultural connections and work to improve this crucial aspect of mentoring and teaching. The MT pilot will strengthen and extend this cultural focus.

**A.1.4. Challenges to Student Learning.** Many AK schools struggle to meet their students' academic needs. In 2022, few AK students met grade-level expectations on the state standardized assessment (30% in ELA, 23% in math, 38% in science); AK trailed the nation in grades 4 and 8 reading and mathematics on the National Assessment of Educational Progress. 23%–28% of students were proficient depending on grade and subject and almost 25% did not graduate with their cohort in 2020 [Appendix. J, Table.A.6].<sup>10</sup> Student groups such as AI/AN, English learners, students with disabilities, and economically disadvantaged students lagged behind in state and national achievement scores across all grades and subjects and graduation rates.<sup>5, 9, 13, 14</sup> The pandemic has exacerbated achievement gaps.<sup>63</sup> VINE will address this issue by using ASMP's validated model of improving teacher retention and student achievement by expanding its reach from teachers new to the profession to those NAK teachers as well.

**A.1.5. Support NAK as They Face the Challenges of Teaching in AK.** Many schools, especially those serving students of color, are plagued by subpar working conditions, ineffective leaders, and lack of peer support. In AK, challenging conditions also include teaching multi-grade classrooms and high turnover of school administration and effective teachers.<sup>31, 49, 107</sup> Most rural AK schools are in remote communities (82% are not accessible by road) and are widely geographically dispersed, even in urban districts, making mentoring time-intensive and costly.<sup>92</sup> New teachers benefit greatly from professional support, yet, nationwide, only half of all new teachers have a mentor. Support systems and mentoring in AK districts vary in breadth, depth, and quality.<sup>39</sup> With a validated, cost-effective model such as VINE will use, districts can better reallocate scarce resources and mentoring can impact teacher retention and student achievement, as it did with ASMP in an earlier study.

**A.1.6. Retaining International Teachers.** With recruitment and retention challenges, many U.S. districts employ teachers from abroad. AK hires many teachers from the Philippines who then face

challenges such as differences in teaching methods, educational systems, cultural norms and values, differences in how U.S. and Filipino students value education, and student behavior issues.<sup>78, 97</sup>

Moving from the Philippines to rural AK, these teachers experience culture shock, cold climate, months without sunlight or darkness, homesickness, missing local food and customs, difficulty balancing work and personal life, and accented English.<sup>84, 97, 107</sup> By providing highly trained quality mentors who are experienced AK educators, VINE strives to improve international teacher job satisfaction by mentoring these teachers in navigating the US school system as well as their new AK teaching and living environments.

## **A.2. Potential Contributions of the Project.**

In recent years, new teacher mentoring has become more common<sup>41</sup> and is a requirement in 29 states.<sup>43</sup> However, these programs vary significantly in intensity and quality, from informal “buddy systems” that provide sporadic and uneven support, to comprehensive systems that match high-quality, trained mentors with teachers and provide adequate time and interaction to improve teacher classroom management and instructional skills<sup>39, 67</sup>. Further, new teacher induction support systems often are missing essential policy and administrative components such as adequate funding, strong policy and program standards, oversight, and comprehensive and timely support.<sup>43</sup>

Schools with comprehensive mentoring programs, professional learning communities, and meaningful interactions with high-quality mentors have experienced decreased attrition rates and created successful support systems for teachers.<sup>53, 93</sup> Well-designed teacher induction programs like what VINE will use have made a difference in retaining teachers and promoting student success<sup>53, 54</sup> ASMP is an effective mentoring program shown to increase skills and retention for ECTs, particularly with high-need students.<sup>22</sup> Many NAK teachers are also ECTs and will benefit from the mentorship of experienced AK educators. Experienced NAK teachers will receive support for Alaskan challenges such as culture, geographic isolation, multigrade instruction, and classroom management. Because ASMP’s extensive experience serving teachers in particularly challenging

settings, the VINE expansion will benefit schools in other states that experience similar geographical and cultural challenges.

Many schools struggle to address student needs in culturally responsive ways and this challenge is compounded when teacher turnover is high and new teachers coming from outside of the community and state are unfamiliar with local cultural norms. The validated mentoring model VINE will use has a unique focus on helping teachers develop cultural sensitivity and competence to engage Native students and communities. Other states with significant rural and Native populations (e.g., Montana, New Mexico, Oklahoma, South Dakota) can adapt the VINE training to support students from diverse cultures. VINE will benefit AK and beyond by expanding and enhancing mentoring with cost-effective delivery and a dedicated focus on culturally responsive methods (details to follow in Sections B and D).

## **SECTION B. STRATEGY TO SCALE**

Scaling is traditionally defined as program replication in new sites or with new participants; however, scalability is multidimensional and is often about potential for an expansion, adaptation, or replication in new, local contexts.<sup>3, 79</sup> In addition, not all elements of a program will be scaled: some are context-specific and may not translate well to changing conditions. ASMP is a complex, emergent, and adaptive mentoring model in a context where local conditions and culture are unique, state education policies can constrain innovation, and political and financial uncertainties are the norm. Purposeful scaling strategies, based on lessons learned by ASMP, will help ensure VINE is successful for teachers regardless of prior teaching experience, urban or rural setting, origin of teacher certification, as well as local context.

### **B.1. Strategies that Address Barriers that Prevent Reaching Scale.**

To ensure uptake and robust implementation, VINE focuses on three barriers to scale: (1) limitation of ASMP not supporting experienced teachers; (2) lack of school/district capacity to support NAK; and (3) limited stakeholder awareness of and buy-in to value of mentoring. In



response, VINE will implement *three scaling strategies*: (1) expand ASMP eligibility to support NAK teachers; (2) support, inform, and provide resources to districts and schools to help boost capacity to meet the needs of NAK teachers; and (3) promote ASMP’s validated mentoring model to heighten local and state stakeholder buy-in. Evaluation of these three strategies provides a method for measuring progress towards VINE’s two goals. VINE will collaborate with RTI, its outside evaluator, on this key evaluation of strategies to address barriers in order to reach scale.

VINE’s Goal 1 is to cost-effectively scale ASMP to reach all NAK teachers (Table 2, pg 25) statewide in rural and urban settings. Goal 1, Objective 1 (G1O1): determine ASMP’s efficacy and cost-effectiveness. G1O2: is scaling ASMP to reach NAK teachers. The three **scaling strategies in response to barriers**—1) expand to NAK, 2) help to boost school and district capacity-building, and 3) promote value—are at the core of VINE’s mentoring expansion in AK, and target G1O2. Finally, G1O3: increases ASMP’s long-term sustainability so practices effective with NAK teachers can be used statewide and long-term. Goal 2 is ASMP’s expansion to MT with a pilot study, and will be further discussed at the end of Section B.

### **B.1.1. Strategy 1: Expand ASMP Eligibility to Support NAK (Goal 1, Objective 2).**

Importing teachers to AK is a long-standing practice, almost from the initial days of statehood—AK’s location can be a challenge as well as a celebration. With recent turnover caused by Covid, changes in retirement benefits, and fewer candidates to the field of teaching overall, continuing to import teachers is just as essential, yet increasingly difficult today. It is more key than at any other time in the history of AK, that districts support their NAK teachers in innovative, creative ways in order to retain them. Quality teachers are the single-most important factor in the education of any child. VINE will offer such support.

VINE builds on ASMP’s mentoring of ECTs, which is a validated method proven to retain teachers. Although many NAK are experienced, they still face many of the same challenges that ECTs do (e.g., cultural dissonance, geographic isolation, teaching multigrade

classes and content areas outside of their area of preparation). To support these NAK teachers, VINE expands the definition of who is eligible for mentoring by focusing on NAK regardless of teaching experience (Goal 1, Objective 2). This is VINE's central strategy to bring ASMP to scale, and in so doing, help AK's 54 districts increase teacher retention, quality of instruction, and improve student performance.

Because the transition challenges of NAK are similar or the same as those of ECTs, this expansion will not require major adjustments to mentoring processes. Quality, full-release mentors will support NAK in both instructional and social areas in much the same way that they support ECTs. These areas will include strategies for how to manage and teach a multigrade classroom, culturally-relevant teaching using Alaska's Standards for Culturally Responsive Schools<sup>16</sup> and transitioning to living in a new culture (often in a remote setting).

With so few American teachers willing to relocate to AK, many districts now recruit abroad, primarily from the Philippines.<sup>78, 97</sup> Foreign teachers often face unique challenges related to language barriers, cultural differences, and unfamiliarity with the local education system. Mentoring, through VINE, will provide opportunities for ongoing professional development, allowing foreign teachers to enhance their pedagogical skills, learn about local educational practices that a U.S.-prepared teacher would understand (e.g., standards-referenced instruction, national assessments), and adapt their teaching methods to meet the needs of AK's diverse student population. As necessary, adjustments to the mentoring processes for international teachers will be determined based on collected data. Process adjustments are a central component of ASMP, and this flexibility uniquely positions VINE in this expansion to foster success for incoming NAK teachers.

In sum, VINE will offer NAK:

1. Best teaching practices in AK, using AK's cultural standards for educators.
2. Existing cultural training and place-based strategies adapted to AK's diverse regions,

with a particular focus on exact region in AK where the teacher is assigned.

3. Connections to existing resources within a variety of districts to enable teachers to support a diverse student population, especially in urban settings.
4. Protocols and processes for purchasing groceries, classroom supplies, and personal materials when/if assigned to a remote rural region of the state.
5. Available through VINE, NAK will have access to ASMP educational resources and its portal in order to connect with peers within the state through cohort conversations, promoting collegiality as well as increased knowledge of content, context, and background knowledge of AK.
6. Connections with mentors including a focus on relevant content areas, curricula, and contexts (e.g., multigrade classrooms, assessment norms, small school protocols, unique educational needs in remote rural AK).
7. VINE individualized, just-in-time and on-demand resources and training opportunities.

**B.1.2. Strategy 2: Support, Inform, and Provide Resources to Districts and Schools to help**

**Boost Capacity to Address the Needs of NAK.** 2022 data indicate that AK’s 54 districts range in size from 12 to 43,000 students.<sup>7</sup> Two-thirds of students are concentrated in the four largest urban districts located on the state’s central road system. Over half of the 54 districts have fewer than 400 students with five districts enrolling fewer than 100 students. Most districts are small and many cover a geographic area the size of a small U.S. state (for example, the Lake and Peninsula School District, with 295 students, is the geographic size of West Virginia).<sup>7, 60</sup> In small schools, it is common for personnel to be assigned multiple duties in areas in which they have little or no preparation. Because of a lack of capacity, it is often difficult for schools and districts to make improvements without external support such as that which VINE can offer. VINE proposes to help counter these smaller District and School capacity limits by providing support to teachers and administrators in a way not locally available.

At the **leadership** level, VINE will hold an annual principal and veteran teacher webinar series on supporting NAK to address common issues and share how principals and veteran teachers can best support these NAK teachers. The goal of this leadership support is to help districts create sustainable practices to support their new hires. Mentors will also provide on-demand and just-in-time support along with 20 years of lessons learned in the field to help principals, veteran teachers, and site educators work more effectively with all new teachers. VINE will conduct training and presentations at state professional conferences and other gatherings to help school leaders and board members better support new teachers in acclimating to and becoming successful in each school and community.

At the **teacher** level, VINE will contribute to building school and district capacity by supporting instruction with an emphasis on connecting the local context and culture to student learning (place-based teaching). The non-evaluative mentor-mentee relationship allows for an open learning environment that is essential for NAK teachers who may otherwise feel overwhelmed by the newness of their teaching assignment and the AK teaching context. The mentee can use the mentor's support as a resource to help guide instructional improvements for other teachers in the school as well. This transfer of knowledge can occur at a school-coordinated activity such as a professional learning community. This indirect extension of the mentor's support, through VINE, is one critical way to increase school and by association, district capacity that in turn, sustains the district's new hire support practices.

**B.1.3. Strategy 3: Share ASMP's Proven Value to Heighten Local and State Stakeholder Buy-in.** VINE will continue ASMP's effective set of outreach activities to build on and expand partnerships. VINE will leverage existing partnerships and forge new ones to rally around common, systemic, aligned educational goals and advocate for and provide additional resources and knowledge gained in the past 20 years of successful mentoring. Partners will contribute as appropriate, making connections, contributing financial resources, expanding access to

professional development, training opportunities, and resources across the system, and acting as strategic advocacy allies for mentoring. As part of outreach, the VINE team will continue to build and foster partnerships with other university programs (e.g., UAF's International Arctic Research Center), funders (e.g., the National Science Foundation [NSF] Established Program to Stimulate Competitive Research), and reach out to regional tribal entities such as the Arctic Slope Regional Corporation, Bristol Bay Native Association, and the Tanana Chiefs Conference.<sup>21, 28, 72, 101, 104</sup> Advocacy and partnerships will highlight the need for NAK and ECT support, emphasize ASMP's success in improving teacher retention and students achievement thereby addressing Goal 1, Objective 3 to increase the project's long-term sustainability.

AK's long tradition of importing the majority of its teachers is most prevalent in remote schools that are usually located in Indigenous villages. The challenges of adjusting to the community's culture and geographic isolation (often remote) are often difficult for NAK, contributing to higher-than-average turnover. Thus, ASMP support of the NAK in these smaller communities is welcomed by the school's stakeholders including regional tribal entities. To increase support for this mentoring, VINE will collaborate with area tribal education groups on the importance of mentoring for the success and retention of all teachers, and especially those NAK teachers working in tribal regions. Together, teaming with tribal folks upon whose land we teach, is always the best way to bring about change for the betterment of these indigenous students. Tribal members will sit on the VINE Advisory Team for ongoing input, feedback and contributions to the mentoring work happening on their land. VINE, therefore, can offer one path to improved teacher retention, and by collaborating with tribes, VINE hopes to be part of the solution.

The VINE team will collaborate and work closely with district administrations, seeking their input, feedback and advice on ASMP mentoring and offering evidence that district fund use (e.g., Title II) is effective. Administrators, too, will sit on the Advisory Team. At the state level, the VINE team will keep the Commissioner of Education current with project activity and continue to advocate

for allowing state school improvement funds to be used for mentoring. ASMP/VINE and the University will leverage our existing strong partnerships with state associations (e.g., administrators, school boards) and present lessons learned about what's working in the field at their conferences. The VINE team will also work at the legislative level by giving informational presentations to the two education committees on the value-added nature of ASMP's model of mentoring to districts' induction and retention work and will partner with legislators to develop state-level policy that includes mentoring. Prior work with several legislators has already led to positive relationships that have helped AK state lawmakers understand the urgent need to reduce teacher turnover and the important role that mentoring has already played in AK. VINE will build on these existing relationships.

## **B. 2. Management Plan**

**B.2.1. Project Organizational Structure and Key Personnel Roles.** The VINE staff includes an expert team of administrators, researchers, mentoring practitioners, technology staff, and cultural knowledge holders to ensure successful implementation and oversight to achieve the two project goals of *scaling* and *expansion* (Table 2, pg 25). VINE's organizational structure consists of two oversight and three implementation groups embedded within UAF as displayed in Figure 1 below.

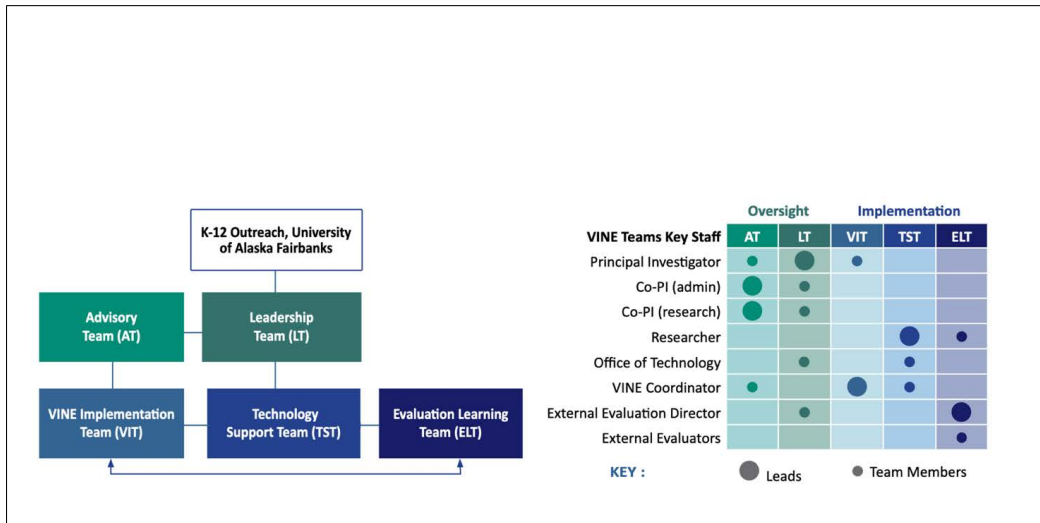
**B.2.2. Project Oversight** VINE data and programmatic activities will be based and administered at UAF by the K-12 Outreach Office<sup>106</sup> as outlined in Appendix J, Table B.1. The **Leadership Team** (LT) has decision-making authority for program implementation, changes, and scaling. The LT will meet quarterly to assess progress toward project goals, coordinate and monitor activities, review data and preliminary findings, engage in ongoing learning from project data, and identify action steps and course corrections for the next quarter based on formative data and feedback. The LT will include key staff listed in Figure 1 below and a mentor and a principal, each who have had at least three years of experience with ASMP.

The **VINE Advisory Team** (AT), composed of key personnel and external stakeholders (e.g.,

members of tribal Native educator groups, district superintendents, human resource officers, school principals, regional district administrators, school board members, teachers' union members, university faculty from other education support programs, and representatives from the SEA), will inform project alignment with ongoing educational support programs and cultural relevant practices for students and mentees. The AT will receive twice-yearly reports from the LT and meet yearly to review project progress and evaluation findings, bring outside perspectives to weigh in on planning and dissemination, recommend program and policy adjustments, seek out input from constituents, and champion VINE in larger education communities.

**B.2.3 Project Implementation Teams.** VINE includes three project implementation teams to execute project goals and objectives. The **VINE Implementation Team (VIT)** will oversee day-to-day logistics and execution of the project. VIT will conduct bi-monthly meetings and report back to the LT. The **Technology Support Team (TST)** will provide ongoing oversight and support for the technology users in the project, such as training and support to mentors, mentees, and schools on virtual technology and hosting, supporting, and developing new features for the online portal. The TST will meet quarterly to address emerging needs. The **Evaluation Learning Team (ELT)** will oversee and execute all learning and evaluation activities that support VINE implementation and outcomes. The ELT, also known as RTI, will meet bi-monthly to coordinate evaluation, learning, and data collection activities. In addition, an ELT liaison will help maintain constant communication with VIT to ensure accurate shared understanding of progress, processes, and protocols as well as collaborating on continuous program improvement cycles.

Figure 1. Organizational Chart, Team Members, and Lines of Authority.



**B.2.4. Project Resources and Capacity.** UAF is a Land, Sea, Space Grant institution with extensive experience managing federal grants from NSF, the National Institutes of Health, and the Departments of Education, Energy, and Defense. UAF has grants and contracts departments at each branch of the University to oversee grant work, collaborate with K-12 Outreach on fiscal issues, and assist with timely report submission. The Office of K-12 Outreach and ASMP/VINE are housed at UAF and have, for over 19 years, been delivering professional development to veteran AK educators serving as mentors. UAF equipment, technical assistance, meeting rooms, and personnel are available to VINE, as well as UAF staff from finance, human resources, marketing, communications, and contracts offices.

**B.2.5. UAF Office of Information Technology (OIT).** OIT Systems Engineering is a team of professional development and operations engineers with a strong background in computer science and software development that has been supporting ASMP successfully for nearly two decades. OIT has several engineers with advanced degrees in computer science and web developers with expertise in full stack web application development. The OIT team will provide training and support for the online portal and distance interactions to VINE mentors, NAK teachers, ECT teachers in MT Pilot,



and participating schools.

**B.2.6 RTI International/External Evaluation Partner (RTI).** RTI is an internationally recognized leader in evaluation. As a nonprofit research organization, RTI’s mission is to improve the human condition by turning knowledge into practice. RTI staff of nearly 5,000 provide research and technical services to governments and businesses in more than 75 countries in areas such as education and training, surveys and statistics, and economic and social policy. Headquartered in Research Triangle Park, North Carolina, RTI has regional offices across the United States, including in the Pacific Northwest. The external evaluation team has designed rigorous cost-effective, implementation, and experimental and quasi-experimental impact research in K-12 schools, and serves as the external evaluator of a mid-phase grant focused on ASMP in rural and remote Alaska; conducted large-scale survey and interview data collection; obtained and managed K-12 state administrative and test data; and conducted sophisticated statistical analyses, including multilevel modeling and mediation analyses needed for this project.

**B.2.7. District Partners.** VINE leverages existing, positive relationships with districts across the state to implement the program (letters of support in Appendix C; NTSs [New to State] in letters is the same as NAK, [New to Alaska]). VINE staff will reaffirm existing partnership districts as well as recruit returning urban and rural districts. Districts signing up for ASMP mentoring vary across years and in the past decade ASMP has partnered with all 54 districts, including the five urban ones— VINE will build upon these existing partnerships. Participating districts will sign Memoranda of Understanding (MOUs) that include agreements for NAK teachers to participate and mentors to access school buildings and certain records, and for schools to transport, house, and provide internet access to mentors onsite. The MOU also includes district commitments that administrators and NAK teachers at school sites will participate in surveys, interviews, and other activities related to the VINE evaluation and to release access through the State Education Agency (SEA) to annual student academic outcome and other performance data.

**B 3. Capacity to Implement VINE**

**Table 1. Key Staff, Role, and Team(s)**

Key Staff	Project Role	Team(s)
<b>Program Oversight and Implementation Key Personnel, UAF</b>		
[Redacted]	Principal Investigator (PI), provides project oversight; liaises with federal VINE Program staff and university administration	Advisory Team (AT), Leadership Team (LT), VINE Implementation Team (VIT)
[Redacted]	Co-PI, provides program support; responsible for partner outreach and oversight	AT, LT
[Redacted]	Co-PI, provides fiscal and administrative oversight	AT, LT
[Redacted]	Researcher, responsible for internal program data collection and analysis, facilitates data sharing across program	Technology Support Team (TST), Evaluation Learning Team (ELT)
VINE Coordinator, To be Hired	VINE Coordinator, coordinates logistics and program implementation	VIT
[Redacted], OIT Systems	OIT Systems Engineering Lead, coordinates portal and virtual technology support	LT, TST
<b>Liaison Consultant</b>		
[Redacted]	Sustainability and policy liaison	LT, VIT, ELT
[Redacted]		

Key Staff	Project Role	Team(s)
[REDACTED]	External Evaluator Director, oversees external evaluation activities; liaises with key VINE staff	LT, ELT
[REDACTED]	Evaluator, oversees cost-effectiveness study including design, data collection, and analysis	ELT
[REDACTED]	Evaluator, oversees impact study including design, data collection, and analysis	ELT
[REDACTED]	Evaluator, oversees implementation study including design, data collection, and analysis	ELT

To facilitate ongoing learning and program improvement, VINE will implement a comprehensive learning plan. The plan will establish processes and tools for timely and actionable data to inform program strategy development, course correction, and success. VINE will build in feedback loops to learn from the variety of rich data sources from both internal and external evaluation efforts. VINE will apply ASMP’s current practice of collecting and analyzing data to feed back into program improvements, which today provides the foundation for an ongoing learning cycle which has been successful for two decades. These data include participation, tracking, and demographic data, state metrics, mentor log notes, participant and mentor feedback, focus groups and interviews, and annual teacher and administrator surveys, as well as some teacher reflection logs through college coursework.

VINE teams will establish internal learning tools that provide real-time and actionable data, such as protocols for conducting before- and after-action reviews for core program activities and administration of NAK teacher and MT's ECT feedback surveys for training and workshops. The action reviews allow the VIT to identify objectives of each core activity, anticipate outcomes, and debrief about implementation. The learning from data sources will be documented continuously and processed immediately by the VIT to make program course corrections and refinements as part of monthly project management meetings. These learnings will be shared with the MT implementation team, to be determined upon the start of the Pilot study (Goal 2). The LT will coordinate with RTI to reduce the data collection burden on program participants and to inform the external evaluation processes and findings.

RTI will prepare quarterly memos of evaluation progress and recommendations for project adaptations. The VIT and LT will participate in quarterly strategic learning debriefs and bi-annually with the AT to generate insights for program decisions based on evaluation findings. These debriefs will be facilitated evaluation sessions, where findings and recommendations are shared and where groups process what data mean for decisions and future actions.

#### **B 4. Dissemination Strategies to Support Development and Replication.**

As part of the expansion, VINE will employ several strategies to disseminate program information and its impact on teacher retention and classroom instructional practice; student achievement in math and ELA; and social-emotional learning (SEL). This dissemination will range from informational outreach to stakeholders, to presentations at conferences, to publications in academic journals.

VINE dissemination will be part of the general outreach the K-12 Outreach Office conducts. This includes a quarterly newsletter and updates to state superintendents, principals, and school board members. VINE will advise the State Commissioner of Education and the education committees of the state legislature on the impact of mentoring NAK teachers. A

guidebook for how to implement the validated mentoring model (Section B.5.2) will be written as part of the expansion to teachers in MT. Once completed, this guidebook will be shared with state agencies and districts in other states.

In addition to state professional conferences, dissemination at national conferences and other events will include the Annual Indigenous Teacher Education Hybrid Conference, the National Rural Education Association Conference, the American Education Research Association annual meeting, and opportunities through Education Innovation and Research (EIR; e.g., EIR Community of Practice workshops) and the New Teacher Center (e.g., NPLN's National Program Leaders Network Conference).<sup>19, 71, 73, 74, 77</sup>

RTI Press will support the dissemination of research findings on the impact, implementation, and cost-effectiveness of the program.<sup>91</sup> RTI Press is a global publisher of peer-reviewed, open-access publications, which inform research and practice, and scientific and policy debates. In addition, information on VINE will be disseminated through other peer-reviewed journals (e.g., American Educational Research Journal, Journal of American Indian Education).

### **B.5. Utility of Products and Effective Use in Multiple Settings.**

VINE's Goal 2, Objectives 4 and 5, is to expand ASMP to another state to understand how the model works in different contexts, document this expansion to support implementation nationwide, and develop materials for sharing (Table 2 pg 25). We do this in the context of MT as MT has similarities with the AK context (e.g., substantial Native American population, few Native American teachers, rural schools). For several years, districts in MT have requested a validated mentoring model for its state's ECTs. As part of the preparation for this expansion, in the past year, ASMP has been working with the MT Office of Public Instruction (the equivalent to AK's SEA) and the Alliance for Curriculum Enhancement on the details of the expansion.<sup>18</sup> Contributing to this VINE Goal, is the fact MT already has pockets of mentoring that are not

necessarily research-based or validated mentoring models, and MT is looking to learn from VINE's support and experiences in order to better retain teachers and improve quality of instruction. MT will, with the support and guidance of VINE, hire and train its own mentors to work with its own Early Career Teachers, and will build upon AK's validated mentoring model.

**B.5.1. Utilizing Existing ASMP Products in Different Contexts.** VINE will meet MT's request for quality mentoring by sharing the validated ASMP model with selected MT teacher-mentors, with a goal of beginning implementation in the fall of 2024. VINE will provide the MT teachers with: the selection process of full-release mentors—limited to those with at least eight years of MT teaching experience; ASMP's two-year training schedule and include the newly hired MT mentors in AK's professional development for application in MT; the Formative Assessment System used in mentoring, including all tools, foundational and high leverage from both NTC and ASMP; guidance and outline for the frequency of mentoring as well as weekly contact with mentees; VINE will share ASMP's data collection processes and reporting as well as the proven mentoring framework ASMP has created. To start, the MT districts will use the ASMP portal to house MT data. MT will develop a similar resource in the years following Year 1 implementation, so that by close of this Pilot, MT is able to manage its own data. This innovative sharing with MT of lessons learned by AK will provide an opportunity to document the processes/ protocols for quality mentoring in order to share with a wider audience, and help improve teacher retention nationwide.

VINE will stress to the MT OPI that VINE mentoring is not a copy-and-paste program. The expansion to MT will include a thorough explanation of ASMP's continuous improvement practices to explain why it has successfully provided mentoring services to AK's ECTs since 2004. VINE will share the specifics of AK's improvement processes and how they facilitate ongoing learning and program improvement. The feedback loops that are built into ASMP provide real-time opportunities to learn from the variety of rich data sources collected through

internal and external evaluation efforts. These data are compiled frequently and used by both the external evaluation team and an internal researcher. This researcher serves as liaison between the implementation and evaluation teams and supports data collection, analysis, and interpretation. The data are used to prepare quarterly memos that report on evaluation progress and make recommendations for project adaptations. These reports will be provided to the AT to invite collaboration, ideas, and another feedback loop for continuous improvement of VINE. Data drives the feedback loops and serves as the foundation of ASMP's continuous improvement practices. ASMP "Alaskanized" the NTC mentoring model, which has resulted in improved 1) teacher retention, 2) quality of instruction and 3) student achievement; VINE will use these lessons to support and guide another state, MT, to develop its own quality mentoring model. MT will adapt VINE's mentoring support for its state, during which time the steps/protocols will be documented by VINE and then shared nationwide, so all states can improve teacher retention with a mentoring model designed for each state's own circumstances and needs. Innovation at its best.

**B.5.2. Replication Guidebook.** The VINE project will produce a guidebook for how to replicate quality mentoring in new settings. The experiences tied to the expansion through VINE to ECTs in MT will serve as the primary resource for the replication guidebook. At this point, there is a general framework for what will be included in the book (e.g., an outline of the steps for mentor selection, breakdown of professional development, mentor-mentee interaction guide). Practice in the MT expansion will inform the selection of additional content for each of the guide's sections. The guide will be generic (i.e., it will not be specific to MT) in that it will identify needed steps for implementation (the what) and offer examples from AK and MT of processes (the how) to take these steps, with the local context likely a source of variance.

Drawing on the expertise and experience of ASMP and VINE mentors and leveraging a core component of AK's validated mentoring model, the guidebook will also provide examples

of how to incorporate local culture into teachers' lessons. Current lessons are based on the AK cultural standards as the framework; guidance on how to adapt these to local standards will be included.

## **SECTION C: PROJECT DESIGN**

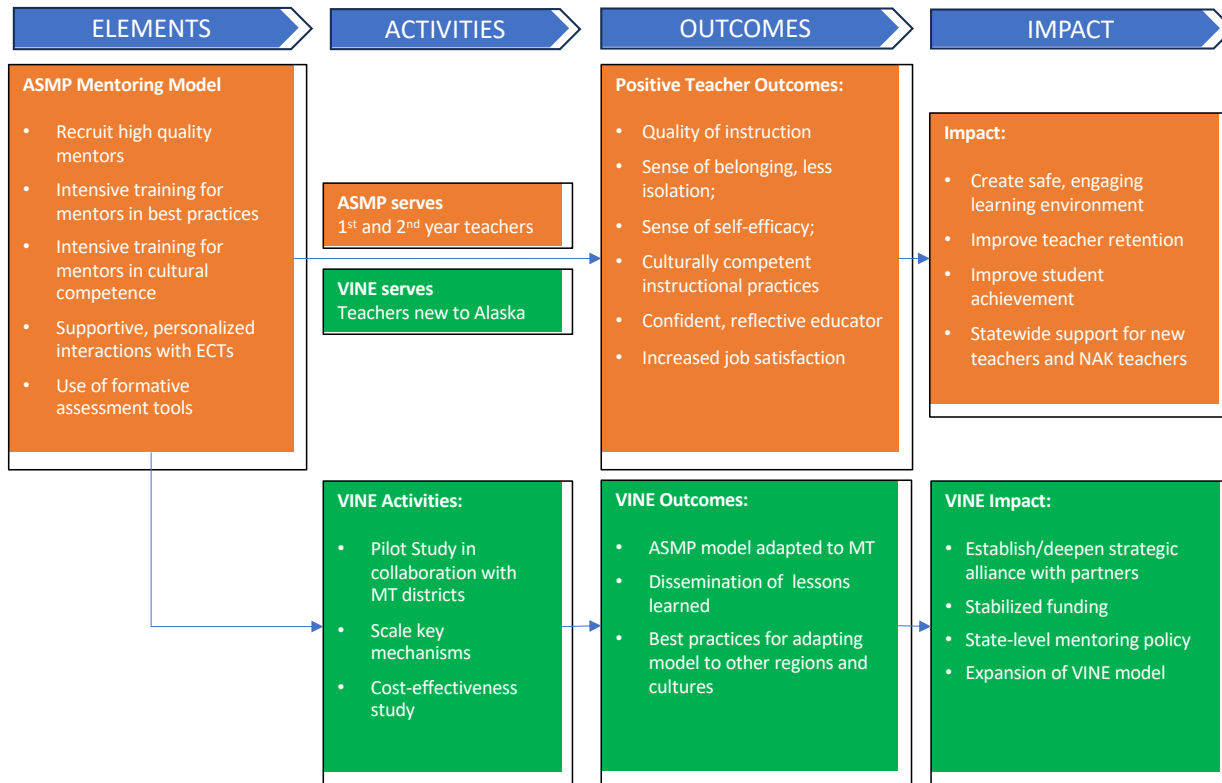
### **C.1. Conceptual Framework.**

Central to VINE's Theory of Change (TOC) is how mentoring leads to teacher confidence, skill development, retention, and student learning (See below). Our TOC posits that ASMP's validated components (high-quality mentors and supportive interactions with mentees) will yield positive teacher outcomes (e.g., sense of belonging, less isolation; confidence; effective, culturally competent instructional practices).<sup>22</sup> Better supported, culturally competent, skilled, effective teachers will create a safe climate and engaging environment of learning in their classrooms resulting in increased job satisfaction and improved teacher retention. To support the expansion and maintain program quality and positive impact, we will scale key mechanisms (i.e., technology support, regional coordination, school/district capacity to support NAK teachers, stakeholder buy-in, lessons learned and tips for adaptation). Scaling strategies and cost-effectiveness results will facilitate sustainability of mentoring's impact on teachers and students by developing diverse stable funding, policy, and deepening strategic alliances with partners (Figure 1).



Figure 1. VINE Theory of Change

ASMP / VINE Theory of Change



**C.2. VINE Goals, Objectives, Strategies, Outputs, Outcomes, and Measures**

Table 2 presents VINE’s goals, objectives, strategies, outputs, outcomes, and measures.

**Table 2. VINE Goals, Objectives, Strategies, Outputs, Outcomes, and Measures.**

Strategies	Outputs and Outcomes	Measures
<p>Goal 1: Scale the validated ASMP mentoring model statewide to cost-effectively expand the project’s reach to serve NAK, regardless of teaching experience</p>		
<p>Objective 1: Determine the efficacy &amp; cost-effectiveness of ASMP mentoring using a school-level RCT (see Section D for specifics)</p>		
<p>1.1 Conduct cluster RCT to rigorously assess project impact to compare mentoring vs. business as usual (BAU) for supporting NAK</p>	<p>Teacher retention &amp; classroom instructional practice; student achievement in math, ELA; student SEL</p>	<p>State, district, &amp; ASMP teacher retention data; Classroom Assessment Scoring System observation tool;<sup>102</sup> AK System of Academic Readiness assessments (math, ELA); Panorama SEL Survey<sup>81</sup></p>
<p>1.2 Conduct rigorous assessment of project implementation</p>	<p>Implementation with fidelity &amp; quality</p>	<p>Fidelity &amp; quality of implementation ratings using the ASMP fidelity matrix tool<sup>22</sup></p>
<p>1.3 Conduct cost effectiveness analysis</p>	<p>Comparison of mentoring vs BAU in relation to study outcomes</p>	<p>Incremental cost-effectiveness ratio; cost-effectiveness acceptability curves focused on teacher retention, instruction, &amp; student achievement</p>
<p>Objective 2: Create &amp; implement a scaling plan to expand ASMP implementation to NAK</p>		

2.1 Expand ASMP support to NAK in rural & urban schools statewide	Mentors implement the model with fidelity; mentors & teachers are competent with required technology; regional service coordination	ASMP fidelity matrix tool; # reported technology issues & resolutions; # regional liaison activities; % school administrators reporting satisfaction with ASMP services
2.2 Strengthen school & district capacity to support NAK	Suite of supports for principals & teachers; highly engaged, informed, & satisfied administrators	Surveys of school staff on understanding of/interest in ASMP; webinar satisfaction & engagement; count of webinars & attendees
2.3 Create stakeholder buy-in	Regional liaison community outreach; advocacy with policymakers; expanded partnerships	# regional liaison activities; % stakeholders reporting knowledge of ASMP; # presentations to legislature; # & types of new partnerships
2.4 Conduct mixed methods evaluation of the scaling strategies	Identification of factors that support & hinder VINE implementation & scaling	Project logs; meeting notes; fidelity of implementation ratings; # reported technology issues; # regional liaison activities; % school administrators reporting satisfaction with services & events; # ASMP activities in which school staff engage; school administrator & staff familiarity with & commitment to ASMP

Objective 3: Increase long-term sustainability of ASMP to serve new-to-state teachers statewide

3.1 Establish sustainable local funding	District cost-sharing & fee-for-service procedures, dedicated SEA funding	Cost-sharing dollars by districts & state; dollars dedicated to mentoring
3.2 Advocate with legislature for sustainable funding	ASMP listed as item in AK's annual state budget	Line item in annual state budget
3.3 Develop new grant funding plan	Multi-year grant proposal plan	# & types federal/foundation grants; total awarded grant funds
3.4. Build district capacity to support mentors	District mentor pool, established district mentoring processes	Increased # mentors over time, documented processes, quality mentor criteria
3.5 Continuously improve ASMP using VINE feedback	Advance knowledge of how to support teachers' cultural competence & the impact on students	Interviews & surveys of stakeholders about strengths & areas of improvement for ASMP & its culturally responsive teaching components

Goal 2: Expand ASMP to another state by serving ECTs in MT to improve quality instruction, enhance student achievement, & increase teacher retention

Objective 4: Understand how the mentoring model works in MT contexts and identify successes, challenges, and areas for adaptation

4.1 Expand & refine ASMP materials to share outside of AK	Revised materials explicitly underlining necessary adaptations	# & types new & revised materials for mentors & teachers
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4.2 Conduct a pilot study in MT	Descriptive analysis of implementation and outcomes for pilot sites in MT	Implementation fidelity (fidelity matrix tool); teacher retention, job satisfaction, self-efficacy, & cultural competence; student achievement & SEL
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Objective 5: Document MT expansion to assist other states in adapting the ASMP mentoring model to their unique circumstances

5.1. Conduct monthly meetings to identify lessons learned about MT implementation	Monthly log with list of successes & challenges, & recommendations for improvement	Monthly log/check-in tool (adapted from mentor’s weekly Collaborative Assessment Log) & outputs; # monthly ASMP/MT meetings.
5.2. Create guide with steps to implement ASMP outside AK	Guide outlining key program components & how to adapt locally	Key program component description & ways to adapt to fit local contexts (e.g., local cultural standards)

### C.3. Project Design.

VINE will use the validated ASMP mentoring model to expand to all of AK, and in addition to serving Early Career Teachers as ASMP does, VINE will now serve all those New to Alaska (NAK), no matter how much experience, which may or may not include some of the new emergency certified teachers—all with an eye towards improving teacher retention and improving student achievement. VINE will utilize the 20 years of ASMP lessons learned, so this Project Design includes key details of ASMP.

ASMP’s (VINE) core is a cadre of highly qualified, well-trained full-time released mentors who support a small mentee caseload.<sup>1</sup> VINE will select exceptional teachers with extensive experience teaching in Alaska to serve as mentors where they receive extensive, ongoing training in evidence-based teaching and mentoring. Mentors will engage in structured as well as informal

interactions with mentees to foster trust, rapport, reflection and build relationships. Teachers and mentors will collaboratively collect classroom data to identify needs and track progress. Formative assessment tools will guide interactions and reflection on growth areas and support goal-setting, planning, analysis of student learning, and development of cultural competence. VINE will use these steps to support NAK, as well as get MT onboard with its own statewide mentoring.

With its strong cultural focus, VINE will create safe classrooms where every student is validated and has equitable access to learning. Alaska's Standards for Culturally Responsive Schools support meeting all learning styles by connecting content to student and place will be used with NAK and as a reference for MT. Veteran Native educators will serve in an advisory (AT) role to ensure integration of Native ways of knowing and cultural relevance and sensitivity. By training mentors and mentees to become aware of their own cultural background, they can incorporate student, community, and classroom culture to better engage students and create a more optimal, equitable learning environment. These cultural strategies will benefit all teachers, whether raised in AK or new to the state, and can be applicable to students of other cultures such as international students, military students, etc. VINE will use ASMP's cultural connections when mentoring NAK, and VINE will assist MT in using its own rich *Indian Education for All* and other existing cultural resources in its mentoring of Montana's Early Career Teachers.

Data collection and management are facilitated by the ASMP (VINE) Portal, which is maintained by UAF Office of Information Technology, and overseen by VINE's internal researcher. The Portal is a custom-built web application developed on modern web frameworks like Django and backed by a highly available and secure database. It houses resources for mentors and mentees, and tracks activity data. VINE will also host an online platform to create a community of practice and discussion forum where ECTs and NAK can share experiences, collaborate, and receive assistance from mentor moderators. An annual webinar series will be adapted by VINE to incorporate the needs of this expansion to NAK and MT ECTs. VINE will document these expansion steps for later

sharing nationwide.

**SECTION D: PROJECT EVALUATION**

The VINE evaluation will assess progress and outcomes on five objectives (Table 2, pg 25) and focus on three sets of high-level questions corresponding to each objective in following Table 3.

**Table 3. VINE Evaluation Questions, Components and Design Aligned to Project Objectives**

Evaluation Component	Evaluation Questions
<b>D1: Evaluate the Impact of ASMP on NAK Teachers (Goal 1, Objective 1)</b>	
1.1 School-level cluster RCT to assess the <b>impact</b> of ASMP on teacher and student outcomes (strategy 1.1), and test program <b>moderators</b> and <b>mediators</b>	<ul style="list-style-type: none"> <li>• <u>Impact</u>: What is the impact of ASMP on NAK retention and student SEL and academic outcomes?</li> <li>• <u>Moderators</u>: Do the effects of ASMP vary according to school, teacher and/or student characteristics?</li> <li>• <u>Mediators</u>: To what extent do teacher cultural competence, instructional skills, sense of isolation, and teaching confidence influence student outcomes? To what extent do these variables, plus job satisfaction, predict teacher retention?</li> </ul>
1.2 Study of ASMP <b>implementation</b> (strategy 1.2.)	<ul style="list-style-type: none"> <li>• To what degree are the core components of ASMP implemented with fidelity?</li> <li>• How is implementation fidelity related to teacher and student outcomes?</li> </ul>

1.3 <b>Cost-effectiveness</b> study (strategy 1.3.)	<ul style="list-style-type: none"> <li>• Is ASMP cost-effective vs. BAU for supporting NAK with respect to impact on teacher retention and student achievement?</li> </ul>
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**D2. Evaluate Expansion Scaling Strategies (Goal 1, Objectives 2 and 3)**

2.1 Mixed methods evaluation (strategy 2.4) of <b>scaling</b> and <b>sustainability</b> strategies (strategies 2.1–2.3 and 3.1–3.5)	<ul style="list-style-type: none"> <li>• What program, teacher, student, and school factors support or hinder implementation of ASMP?</li> <li>• How do the scaling strategies of offering a suite of supports, building school and district capacity, and creating buy-in help schools to implement ASMP with fidelity?</li> <li>• What strategies are most effective at increasing sustainability?</li> </ul>
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**D3. Conduct a Pilot Test of ASMP in MT (Goal 2, Objectives 4 and 5)**



3.1 **Pilot test** using mixed methods, descriptive case study (strategy 4.2.)

- To what extent do MT mentors deliver the mentoring program with fidelity?
- How do MT teachers and their students score on mediators and outcomes measured in the impact study (see Subsection D.1)?
- What are the key challenges and successes in MT for adapting ASMP to fit their local needs?
- What aspects of ASMP need to be adapted for use elsewhere?
- What “lessons learned” can be shared with other states interested in mentoring NAK and/or ECTs, especially regarding teaching in culturally diverse communities?

### **D.1. Evaluate the Impact of ASMP on NAK Statewide in AK (Goal 1, Objective 1)**

To address Goal 1, Objective 1 (AK expansion), we will conduct three sub-studies: (1) impact of ASMP on NAK and their students; (2) fidelity of implementation; and (3) cost-effectiveness (strategies 1.1–1.3 [Table 2 pg 25]).

**D1.1. Impact Study Design to Meet WWC Standards Without Reservations.** To meet **WWC group design standards without reservations**, we will conduct a multisite cluster RCT to assign schools within each district to either receive ASMP or to continue conducting “Business as Usual” (BAU) to support NAK. Using district as a block will help to ensure comparability among schools on district and region characteristics. The random assignment of schools as clusters will minimize the

potential treatment contamination between teachers within the same schools. ASMP is a two-year program, therefore each study cohort will participate for two years.

**D.1.1.1. Baseline Equivalence and Differential Attrition.** We assume a 20% attrition rate of the participating teachers.<sup>34</sup> Following WWC guidelines, we will statistically assess the comparability between the two study groups (ASMP vs. BAU) regarding school and NAK characteristics annually, at the beginning of school, and baseline measures of student and teacher outcomes (e.g., student achievement scores, teaching practices). If group nonequivalence exists despite randomization, we will statistically adjust the analytic sample by including nonequivalent characteristics as predictors in the outcome models. Data for NAK hired after randomization and baseline data collection will not be included in the impact analyses per WWC guidelines. We will minimize potential attrition of schools and teachers through ongoing, clear communication about the study prior to randomization and by providing stipends to participating teachers. Treatment and comparison teachers will receive stipends, so we do not expect differential attrition.

**D.1.1.2. Data Collection: VINE outcomes, mediators, and moderators for impact analysis.**

The evaluation will involve the collection and analysis of qualitative and quantitative data on VINE project components and outcomes identified in the program TOC. Appendix J, Table J.D.1 shows the impact study data collection timing for the two cohorts.

*Valid and reliable performance data on relevant outcomes.* Three main **outcomes** that we will assess across ASMP and BAU conditions include NAK retention, student SEL outcomes, and student achievement (Appendix J, Section D, Table D.2) for outcomes and psychometric properties. To reinforce the validity of findings, the evaluation will involve multiple data sources. We will also collect a variety of school, teacher, and student characteristics, as program **moderators** for statistical controls in our analyses and to conduct sensitivity analyses on impact (data analysis details in Appendix. J., Section C).

To measure NAK **retention**, VINE regional coordinators will secure agreements with

participating districts to obtain retention data for study teachers (those in ASMP and BAU conditions) in their first and second years, and the third year for Cohort 1 only. To provide valid and reliable measures of **student achievement**, we will acquire AK System of Academic Readiness (STAR) achievement test scores for students of teachers assigned to the ASMP and BAU (comparison) conditions. STAR is implemented in grades 3–9 in math and ELA.<sup>11</sup> STAR includes aligned fall and winter assessments and the spring summative assessment. Fall assessments will serve as baseline data, and subsequent spring data will serve as the outcome for the first and second years for each teacher, in each condition (ASMP vs. BAU) in the study.

Student **SEL** outcomes for this study include classroom engagement, teacher-student relationships, sense of belonging, and classroom mindset, as measured by survey instruments designed by Panorama Education ([www.panoramaed.com](http://www.panoramaed.com)).<sup>80</sup> Briefly, *classroom engagement* addresses how attentive and invested students are in class. *Teacher-student relationships* focus on the connection between teachers and students in and outside of the classroom. *Classroom belonging* reflects student perceptions of being valued members of the classroom community. *Classroom mindset* measures student perceptions of their potential to change factors central to their performance in class (e.g., in [CLASS], how possible is it for you to change your level of intelligence?). Panorama is a validated, well recognized SEL measurement tool, and is aligned to the Collaborative for Academic, Social, and Emotional Learning (CASEL) SEL framework. Two forms, for grades 3–5 and grades 6–12, help ensure readability and comprehension of the survey items. Students will take the Panorama Survey in fall and spring each year to assess teacher impact on these important student outcomes in the ASMP and BAU study conditions.

**Mediators and moderators.** To better understand the ways in which mentoring impacts student and NAK outcomes, we will conduct mediator analyses using multilevel structural equations models, based on the VINE TOC, see above on pg 24 (Figure 1). For student SEL and achievement outcomes, we will test teachers’ instructional practices, cultural competence, and teaching self-

efficacy as mediators. For teacher retention, we will test teachers’ perceived isolation, teaching self-efficacy, cultural competence, and job satisfaction (Table 4), see below. ASMP staff will work with regional coordinators to help teachers administer the surveys in ways that help ensure valid responses (e.g., reading aloud for struggling readers).

**Table 4. VINE Mediators and Moderators of Impact**

Mediator/Moderator	Measure Data Collection Timing
<b>Proposed Mediators</b>	
Teacher Perceived Isolation	Social Isolation scale. <sup>51</sup> Fall & Spring, Years 1–2 of teaching, Spring Year 3 (C1 only)
Teacher Cultural Competence	Culturally Responsive Teaching Beliefs, Self-Efficacy Scale (CRTSE), <sup>98</sup> Mentor Cultural Competency rubric. CRTSE and mentor ratings obtained in Fall and Spring of Years 1–2 of teaching
Classroom instructional practices	CLASS observation tool <sup>83, 102</sup> Fall and Spring of first year of teaching, Spring of second year
Teaching Self-Efficacy	Induction Activities Teacher Questionnaire. <sup>42</sup> Fall & Spring, Years 1–2 of teaching, and Spring Year 3 (C1 only)
Teacher Job Satisfaction	Teacher Motivation and Job Satisfaction Survey. <sup>66</sup> Spring, Years 1–2 of teaching, and Spring Year 3 (C1 only)
<b>Proposed Moderators</b>	
School characteristics	Region; proportion English Language Learners; class size, school size (administrative data). Fall, Years 2–4 of the study

Mediator/Moderator	Measure Data Collection Timing
<b>Proposed Mediators</b>	
Teacher characteristics	U.S. vs non-U.S. teacher hire; area(s) of certification; race/ethnicity; grade level(s) and subject(s) taught (administrative and ASMP portal data). Fall, Years 2–4 of the study
Student characteristics	Race/ethnicity; English learner status; students with disabilities status; gifted status (administrative data); baseline achievement (STAR math and ELA scores, grades 3-9); baseline SEL (Panorama Survey). Fall, Years 2–4 of the study

To measure **instructional practices**, we will use the CLASS observation protocol with a matched subset of 50 teachers in the ASMP and BAU groups each, in each cohort, for a total of 200 teachers.<sup>83, 102</sup> VINE personnel will video record 40-minute sessions of classroom observation. CLASS developer Teachstone will train and certify raters to score observations, requiring a video-based assessment with at least 80% accuracy. During data collection, observers complete regular calibration and double coding. Reliability rates average at least 85%. Online surveys will measure teachers’ perceived isolation, teaching confidence, cultural competence, and job satisfaction.

**D.1.1.3. Sample.** VINE project staff will recruit schools across the state in two cohorts (starting in Years 2 and 3 of the study, respectively). Participating schools will be randomized into receiving ASMP or BAU (the comparison group) for supporting NAK. We conservatively estimate 400 NAK *per year* to be **eligible** to receive ASMP mentoring, and after the randomization half will receive mentoring and half BAU. We expect these teachers will represent *at least 75* schools, across *at least 38* districts. These numbers are based on our current mid-phase EIR grant, and represent a minimum expectation given that VINE will serve NAK, which are higher in number than ECTs. For VINE, we

will recruit schools and districts with NAK in-school years 2025–26 (Cohort 1) and 2026–27 (Cohort 2). We will randomly assign schools within each participating district to receive either ASMP for their NAK or BAU supports. In each cohort, we conservatively aim to serve 200 with the mentoring program and to serve 200 in the BAU schools, for a total of 400 in the ASMP and 400 in the BAU conditions across the two cohorts. ASMP is a 2-year mentoring program, so we will follow both cohorts during their first and second years of teaching. Cohort 1 will participate for an additional third year beyond the two years of mentoring or BAU (study Year 4) to evaluate longer term outcomes on perceived teaching self-efficacy, job satisfaction, and retention.

**D.1.1.4. Power Analyses.** We will conduct power analyses setting statistical power at 0.80 and significance levels at 0.05. We assume 30% of school-level variance is explained by the district and mentor blocks and by school-level covariates; 30% of teacher-level variance is explained by teacher-level covariates; and we assume a school-level intraclass correlation (ICC) of 0.15. Additionally, assuming 20% attrition of participating teachers, power analysis for teacher retention suggests a minimum detectable effect size (MDES) of 0.20. For the analysis of student academic achievement and SEL, we estimate data for an average of 25 students per teacher. By assuming a teacher-level ICC of 0.15 and 50% student-level variance explained by student pretest data, we will be able to detect a MDES of 0.10 for the study of student academic performance in each subject and for SEL outcomes.

**D.1.1.5. Analysis Plan.** Our analysis plan for the impact study includes estimation of program impacts and mediator/moderator effects (Appendix. J., Section C). To estimate program impacts of ASMP on teachers and students, we will use multilevel models to account for the clustering of teachers within schools and students within teachers. We will employ a model-based multilevel imputation procedure to impute missing responses using relevant variables.<sup>61</sup> Analyses will focus on the overall impact of ASMP on teacher retention, student SEL and achievement, and differential moderator effects on teachers, students, and schools with different characteristics. For our mediator

analysis, statistical models will examine the indirect effects of ASMP on teacher retention, student SEL and achievement through each mediator and direct program effects controlling for the mediators.

**D.1.2. Implementation Study.** Our implementation study assesses the degree to which ASMP is implemented with fidelity and how levels of fidelity are related to teacher and student outcomes.

**D.1.2.1. Key Program Components and Implementation Thresholds.** ASMP’s key program components have been validated with an implementation fidelity tool created for the i3 validation study (Appendix. J, Section D, Table D.4, pg 35) that we will use here.<sup>22</sup> We will focus on two key program components, high-quality mentors, and supportive interactions with teachers. To evaluate implementation fidelity, we will use completed formative assessment tools, participation data, and teacher information, supplemented with surveys and interviews with ASMP staff, mentors, teachers, and district staff. We will leverage existing ASMP implementation surveys and interview protocols from our current EIR mid-phase project to ensure findings can be used for program improvements and scaling efforts

**D.1.2.2. Threshold Coding.** We will apply thresholds (Appendix. J, Section D, Table D.4) and create dummy codes for each component to model relationships between program components and outcomes. Following the i3 implementation fidelity protocol, we will code numeric thresholds for low (“0”), adequate (“1”) and ideal (“2”) implementation for each mentor for their implementation of each indicator of ASMP.<sup>52</sup> Indicator scores will be averaged for each mentor for each key component.

**D.1.2.3. Analysis Plan.** We will statistically model relationships between each key component fidelity score and the main study outcomes (teacher retention, student SEL and achievement). We will use multilevel models, like those used for the impact study, to account for clustering of teachers within mentors and mentors within schools. Statistical models will include program moderators (Table 4) to evaluate the extent to which school, mentor, and teacher characteristics influence

implementation. Results will indicate the extent to which ASMP was implemented with fidelity and the effect of implementation fidelity on the three program outcomes.

**D.1.3. Cost-Effectiveness Study.** Drawing on the data and impact analyses described in subsection D.1.1, we will conduct a cost-effectiveness analysis (CEA). The CEA will assess whether providing NAK teachers high-quality mentoring is a cost-effective strategy at improving teacher retention and student achievement relative to BAU. To answer this question, we will take an ingredients' approach to estimate costs of providing high-quality mentoring. This approach involves semi-structured interviews with key stakeholders to inventory all resources (i.e., ingredients) used (e.g., staff time, technology, travel, trainings) for implementing key program components (Appendix. J, Section C)<sup>58,62</sup> We will then collect unit costs (e.g., mentor hourly wage) and intensity of use (e.g., mentoring hours) to estimate total costs for each resource. We will combine the estimated costs with outcome data to perform a CEA of high-quality mentoring compared with BAU. The CEA will inform the degree to which the costs of mentoring are related to changes in teacher retention and student achievement shown in Table 3 (further details in Appendix. J., Table A.6).

**D.1.4. Providing ongoing performance feedback and periodic assessment of progress.** The VINE ELT meets monthly to discuss progress and to problem-solve evaluation implementation challenges. Additionally, ELT will share evaluation results as data are collected and analyzed, to help ensure timely program adaptations and refinements, when and where they are needed. We are currently using this approach in our mid-phase EIR *STARR* project, and it has helped to identify data collection challenges and intermediary outcomes which have informed program decision-making. We will continue with this collaborative and continuous improvement strategy in VINE to help ensure a successful evaluation as well as program adaptations as needed (Section B).



## **D.2. Evaluate Expansion Scaling Strategies (Goal 1, Objectives 2 and 3)**

Objectives 2 and 3 (Table 2, pg 25) are focused on the scaling to NAK teachers and sustainability of ASMP across AK and will be addressed through a mixed-methods process evaluation.

### **D.2.1. Guidance about effective strategies suitable for replication or testing in other settings.**

Evaluations examining scalability document an innovation’s implementation; assess credibility, buy-in, and perceived value; and yield evidence of effectiveness, replicability, and feasibility, including simplicity and ease of adoption. Evaluation of VINE scaling strategies will consist of multiple approaches and data sources, including developmental evaluation of innovations to replicate the model across contexts, the challenges, and successes of strategies to scale the program to support NAK teachers across AK, and outcomes evaluation assessing the efficacy and promise of impact of the strategy across the local school proof points. Data sources will include surveys and interviews with school administrators and boards, mentors, teachers, and other key partners; focus groups with teachers, parents, and community members; analysis of existing ASMP program and financial data and school-based outcomes; and case studies to illustrate exemplar or innovative proof points. Table 2, pg 25 shows the scaling and sustainability strategies, processes and outcomes, and data sources for the proposed evaluation. That table briefly summarizes the data sources and methods RTI intends to use. This mixed methods evaluation will produce information by which RTI can document the effectiveness of strategies for scaling and/or sustainability that can be shared internally to strengthen ASMP in AK and then share findings with other states that are interested in implementing a similar mentorship model.

## **D.3. Conduct a pilot test of ASMP in MT (Goal 2, Objectives 4 and 5)**

For Objectives 4 and 5, we use mixed methods in a pilot to test the adaptation of ASMP to fit the local MT district context. **First**, we plan for MT implementation during first six months of VINE’s Year 1. VIT will revise and refine ASMP tools, especially the cultural competence component, to fit local settings. **Second**, starting in fall 2024 and continuing into 2025–26, RTI will

conduct an observational, descriptive study of the implementation and outcomes of the adapted ASMP model as it supports an ECT cohort in first two years of teaching in participating districts. RTI will use the same moderator, mediator, and outcome measures as in AK and the same implementation quality and fidelity measures. Appendix. J. Section D, Table D.3 shows the timeline for pilot data collection. **Third**, RTI will conduct interviews with teachers, mentors, school and district staff, families, and community members, about perceptions of the mentoring model, challenges, and successes, especially as it pertains to supporting ECTs in providing culturally-responsive instruction and connecting learning to local communities. These findings will inform ASMP adaptations, particularly to cultural competence, and the field about ways to adapt and adopt ASMP effectively outside of AK. RTI will supplement this information with several case studies of ECTs who are showing strong cultural competence in their classrooms with the support of their mentor, to document high leverage mentoring practices that best support these teachers. As a result, VINE will document processes and practices that can be adopted and adapted in other states to create effective teacher mentoring programs for ECTs and/or NAK teachers.

## **SUMMARY**

VINE proposes to expand nearly two decades of successful and validated mentoring work in AK by supporting teachers New to Alaska as well as Early Career Teachers in another state (MT). Hoped for outcomes for this innovative and far-reaching proposal include: 1) Retaining teachers at a time of crisis within our nation; 2) Improving the quality of teacher instruction including paying attention to student Social Emotional Learning and individual Cultural Connections; which all together will create safe, caring learning environments where students are engaged and want to learn--improving student achievement. By replicating AK's lessons learned and sharing those processes with extensive dissemination, a well-documented guidebook can lead others into similar success in supporting our education profession nationally: Students deserve a quality teacher at the front of every classroom.

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