A. Coronavirus Burden /Needs Statement

A.1. Highest Coronavirus Burden:

Maine, a largely rural and under-resourced state with extremely limited broadband access, scores in the highest (81st-100th) percentile for Coronavirus Burden, based on the factors identified in the application package table.

A.2. Other measures of COVID-19 impact/burden:

The COVID-19 pandemic has highlighted and exacerbated existing inequities and challenges in our state. The lack of broadband access in rural areas, impacting more than 20 percent of our K-12 students, has been a primary concern for many years, but the issue became a humanitarian crisis when schools closed their doors in March. More than 25,000 Maine students found themselves abruptly cut off from their educational settings, teachers, peers, and support services due to a lack of internet connectivity.[1] With alarmingly high rates of teen suicide, opioid addiction, significant mental illness (SMI), and domestic violence; Maine has seen an increase in mental health crisis calls by 57 percent to the intentional warm line and increases for mental health related inquires into the general 211 information line since March 13, 2020.[2]

Maine's educators[3] felt overwhelmed and not adequately prepared for the sudden and complete shift to remote instruction on March 16th. In a survey of 1400 Maine teachers, 66 percent reported that they lacked training and/or resources for providing remote instruction (compared

[1]Maine DOE. (2020, May 15). *Mills Administration Secures WiFi & Learning Devices for 100 Percent of Maine Students Reporting a Need In Face of COVID-19's Impacts on Schools*. https://mainedoenews.net/2020/05/15/media-release-mills-administration-secures-wifi-learning-devices-for-100-percent-of-maine-students-reporting-a-need-in-face-of-covid-19s-impacts-on-schools/

[2] Brogdon, Beth. (2020, June 1). Unprecedented mental health crisis looms as Mainers battle COVID-19, economic downturn, experts warn. *News Center Maine.* https://www.newscentermaine.com/article/news/health/coronavirus/unprecedented-mental-health-crisis-looms-amid-battle-against-covid-19-experts-say/97-b3a71e05-e678-45aa-b2f5-236d991fddaa

[3] For the purpose of this application, the term "educator" means a teacher, administrator or other education professional employed by a school system.

with 53 percent nationally), and 21 percent of Maine teachers reported a lack of internet access from home.[4] 94 percent of the teacher respondents reported the remote learning experience for students as "worse" or "much worse" in terms of learning outcomes when compared to the in-person educational experience.[5] Additionally, between 45 percent and 64 percent of Maine students (depending upon grade level) found remote learning to be "overwhelming".[6] Furthermore, family members and caregivers forced to bear the burden of supporting remote instruction at home also reported a lack of preparation and resources. 70 percent of parents/guardians who responded to a Maine Parents Federation survey reported concerns about academic and social regression. Based on these figures, overall, COVID-19 negatively impacted more than half of Maine's learning community.[7]

The Maine Department of Education (MDOE) staff meets with Special Education administrators across the state every week and recent conversations have surfaced significant concerns with effectively providing the accommodations and services required in individualized education plans (IEPs) through remote learning. Additionally, Maine learned last week that our state leads the nation in racial disparity with respect to COVID-19 cases; Black Mainers make up 27.7 percent of Maine's COVID-19 cases even though these residents represent just 1.4 percent of the total population.[8] This disparity not only shocks us, but we find it unacceptable. The impact of COVID-19 on Maine's students of color shines an ever-brighter light on the systemic inequities within our state, and we are committed to addressing these inequities through the project described in this application to make high-quality remote learning accessible for all Mainers.

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[4] Maine Education Association. (2020). *Survey of Maine Teachers on Remote Instruction*.
[5] Id.
[6] Maine Parents Federation. (2020) *Parent Survey during COVID-19*.
[7] Id.
[8] Miller, K. (2020, June 21). Maine has nation's worst COVID-19 racial disparity. *Portland Press Herald.* https://www.pressherald.com/2020/06/21/maine-has-nations-worst-covid-19-racial-disparity/

Due to its demographic and economic makeup, Maine faces the most disastrous of economic fallouts as a result of COVID-19.[9] Maine's tourism economy features restaurants, lodging, wilderness tours and excursions, and these coastal amenities and related small businesses prove integral to the survival of most Maine towns. Our economy is already suffering irreparably from the loss of revenues, the closure of longstanding businesses and the significant unemployment resulting from the pandemic. By April, Maine's unemployment rate had risen to 10.6 percent, and the State lost 16.6 percent of jobs overall between February and April alone.[10] As of June 10th, 145,278 people had filed for unemployment in Maine.[11] For reference, 22 million visitors vacationed in Maine during the summer of 2019.[12] Tourists spent almost $6.5 billion in the state and supported 116,000 jobs.[13] However, due to COVID-19, current trends forecast only 7 to 10 million tourists this summer, a 45 percent - 69 percent decrease, though even these numbers remain uncertain.[14] The subsequent decrease in state revenues from sales tax and excise tax, indicate an anticipated decline of $240 million in state tax; this number is skewed, however, as income taxes are based on the previous year's income tax, so the real impact may not be known until 2021.[15] Nevertheless, negative economic consequences have already been felt. In March alone, Maine's sales tax revenue fell $16 Million, with taxed lodging revenue down 45 percent,

[9] McGuire, P. (2020, April 26). Maine's economic fallout from coronavirus could be nation's worst. *Portland Press Herald.* https://www.pressherald.com/2020/04/26/maines-economic-fallout-from-coronavirus-could-be-nations-worst/

[10] Ettlinger, M. and Hensley, J. (2020, June 25). *COVID-19 Economic Crisis: By State,* University of New Hampshire, Carsey School of Public Policy. https://carsey.unh.edu/COVID-19-Economic-Impact-By-State

[11] Find New Citation for this – fraud article?

[12] Exec. Order No. 57 FY 19/20 (2020, June 9). https://www.maine.gov/governor/mills/sites/maine.gov.governor.mills/files/inline-files/EO-57.pdf

[13] Maine Office of Tourism. (n.d.) *2019 Maine Office of Tourism Highlights.* https://motpartners.com/wp-content/uploads/2020/06/2019 Maine Tourism Highlights.pdf

[14] Supra note 12.

[15] Thistle, S. (2020, May 19) State tax revenues drop as COVID-19 tightens grip on Maine economy. *The Sun Journal.* https://www.sunjournal.com/2020/05/19/state-tax--revenues-drop-as-covid-19-tightens-grip-on-maine-economy/

and taxed meals and prepared foods lowered 33 percent.[16] Tax revenue feeds Maine's public education system. As a result of these mounting losses, many school districts are considering massive cuts to the 2021 school budgets to offset predicted shortfalls.

A.3 Analysis of strengths, capacities, needs, gaps, and efforts by the State to address these: Since the onset of Maine's state of civil emergency, MDOE has engaged educators, students, parent groups, and school and district leaders in daily discussions and focus groups. We used data from these conversations, along with surveys, student data systems, and our school finance data system to analyze the needs of our schools on an ongoing basis and attempted to address the most urgent needs as efficiently as possible. MDOE acted in a nimble and purposeful manner to provide the necessary supports, funding, tools, and guidance to schools, educators, students, and parents. Our response targeted the top priorities identified by families, students, and educators education leaders: (1) provide 100 percent student access to the internet; (2) establish an online learning platform for anywhere/anytime learning; and (3) leverage inherent opportunities to examine and improve systems. The following outlines some of the efforts by MDOE and the State to support students during COVID-19.

[16] Figueroa, K. (2020, June 18) MEMORANDUM Revenues-May 2020. Maine Department of Administrative and Financial Services. http://legislature.maine.gov/doc/4146 and Andrews, C. (2020, May 19) Maine sees half of expected April revenue saying recession 'will be for the record books'. *Bangor Daily News.* https://bangordailynews.com/2020/5/19/news/state-revenue-falls-short-248m-for-april/

A.3.1 State Efforts to meet needs: Emergency Resources Targeting Basic Needs

State Efforts to Meet Needs Child Nutrition: The closure of classroom-based instruction due to COVID-19 led to serious concerns regarding school nutrition and required an instant shift in how we ensured access to healthy food for school-aged children. The MDOE applied for all available waivers, receiving a total of 28 to implement alternative feeding locations under the Summer Feeding Program. MDOE staff provided ongoing support and resources to the field and hosted weekly meetings to provide program-related information and technical support. In 2019, Maine placed 122 sponsor programs at 467 sites and served a total of 727,612 meals. In contrast, the emergency response summer feeding program placed 199 sponsor programs at over 700 meal delivery sites statewide. In providing every community in Maine with access to a food service site, Maine served 2.1 million meals to children in April. Our interactive meal site map was made available online so that families could click to find sites in their communities easily, and the site map remains live today.

State Efforts to Meet Needs: Emergency support for homeless students: We examined other urgent student needs and developed a microgrant application for schools to access support for homeless children. The geographical and socioeconomic diversity of our state requires local and regional approaches to support students and schools, so we ensured flexibility for McKinney Vento coordinators to utilize these resources in a manner that best addressed local needs.

State Efforts to Meet Needs: Connectivity and Remote Learning: The MDOE took immediate action to secure internet access and devices to facilitate at home learning for Maine's students, both public and private. Within the first week of shutdown, MDOE surveyed public and private schools to identify those students who lacked access to the internet and enlisted support from charitable organizations to begin addressing these needs through cellular data plans and devices. When the Governor's Education Emergency Relief Funds became available, MDOE was prepared to leverage those funds to continue to meet reported student needs. We sent out multiple surveys and reached out directly to schools and districts with known underrepresented and under-resourced student groups to ensure equitable access to this opportunity. By May 15th, Governor Janet Mills announced that the State had successfully met 100 percent of the reported student needs, providing connectivity for 21,845 Maine students.[17] MDOE is continuing to survey schools to determine further connectivity needs, and we have already reached out to both higher education institutions and adult education programs to determine the connectivity needs of their students.

State Efforts to Meet Needs: Accessing and deploying Federal Resources: MDOE released the Elementary and Secondary School Emergency Relief (ESSER) funding application for school administrative units (SAUs) on Tuesday, May 19, 2020. MDOE staff provides ESSER office hours each week for district programs and fiscal leads. MDOE has received and approved 31 SAU applications so far.

[17] Office of the Governor. (2020, May 15). *Mills Administration Secures WiFi & Learning Devices for 100 Percent of Maine Students Reporting a Need in Face of COVID-19's Impacts on Schools.* https://www.maine.gov/governor/mills/news/mills-adminstration-secures-wifi-learning-devices-100-percent-maine-students-reporting-need

The US Department of Education (US DOE) awarded the State of Maine one of four Governor's Emergency Education Relief Funds, a 9.2 million-dollar allocation from the CARES Act Funding on April 24, 2020. We used these funds to support universal connectivity for Maine students.

State Efforts to Meet Needs: Professional Development and Online Office Hours for Educators: When classroom-based instruction was suspended in Maine beginning on March 16, 2020, MDOE staff immediately began providing daily professional development to the field through remote office hours. We provided 824 hours of live consultation and professional development last month alone including content-specific professional development, special education, and social/emotional/behavioral and mental health support for students and staff. MDOE established a series of professional development opportunities-based field requests and has already awarded 14,000 contact hours for professional learning since the pandemic began. For example, one of MDOE's math specialists provided almost 3,000 contact hour certificates for six sessions. Many of the office hours and professional development sessions have been recorded and made free and available to the public on our MDOE COVID-19 webpage. In fact, we feel proud to share that our support strategies and webpage have been recognized by major media outlets, including the New York Times and PBS News Hour, as an exemplary resource for schools. What's more, our professional development and live consultation options have attracted participants from across the United States and Canada, as we have successfully scaled our impact beyond Maine's borders.

State Efforts to Meet Needs: Maine Online Opportunities for Sustained Education: To ensure that learning can continue during the COVID 19 crisis or an emergency in the future, MDOE collaborated with Maine curriculum leaders, Maine educational community organizations

(museums, science centers, libraries) and Maine educators to create a library of asynchronous learning modules aligned to the Maine Learning Results. These modules feature collaborative, interdisciplinary, project-based learning activities to ensure an enriched and meaningful remote learning experience for students and educators who use this option. We plan to offer content and instruction by Maine teachers to address all domains in all grade levels, K-12. Each module involves actual instruction, resources and materials, and differentiation options to support learners who crave additional challenges and learners who need more scaffolding and accommodations. We will also roll-out a K-12 Social-Emotional Learning curriculum and targeted lessons to foster Executive Functioning and Communication Skills for Special Education students, as well as for all learners who could benefit from such instruction.

While ambitious, our project and timeline are already underway, and we intend to create and publish enough modules by early September to cover one quarter of a school year. We plan to build a full year of modules, staying at least one quarter ahead of the school calendar, with all offerings open and accessible for anyone to use. The education community has responded strongly to our vision. Our team received over 400 applicants—in the first week.

A.3.2 Barriers in Meeting the Needs of Students / Analysis of Gaps and Capacities:

According to MDOE data, twenty percent of Maine's students live in rural areas without access to high-speed, broadband internet. During shutdown, MDOE pursued a cellular service solution to overcome barriers to statewide student connectivity as previously described. However, given Maine's rural nature, cellular service remained inaccessible to certain homes, requiring some students to connect through portable hotspots. As a result, educators have needed to step up more than ever to build effective lines of communication with students, families, and caregivers. Similarly, several participants in our focus group have highlighted myriad challenges to

providing families with effective support and mentorship to engage their students in at-home learning (e.g., determining a quiet place to study, creating a daily schedule of time periods for specific classwork, and setting clear expectations for those time periods).

After analyzing data from different focus groups and surveys the message is clear: Maine must rethink its approach to remote learning to successfully support Maine students, especially those in rural areas. In general, Maine teachers lack significant training, professional development, and technical support for implementing remote learning programs. While some schools and educators successfully navigated the emergency remote learning period this spring, most struggled due to lack of training, lack of resources, lack of connectivity, and a variety of other logistical factors—not the least involving teachers trying to care for their own young children at home while maintaining continuity of learning for their students in school.

It is also important to note that the persistent evidence of inequity stands as one the major concerns facing our state and its education system. COVID-19 has brought a new and urgent focus to this issue, illustrating that our students of color have shown more susceptibility to both the disease and the associated social and educational isolation. Given Maine's status as a "local control" state, without minimum requirements or standard protocols for remote learning, the disruption of in-school learning exacerbated long-enduring problems, particularly for our underrepresented students, who had the poorest experiences with remote learning. Furthermore, our Student Cabinet to MDOE provided us with alarming insights regarding student mental health, the impact of isolation, and inequities across demographic groups. All of these concerns and barriers informed our approach to our project proposal.

In analyzing our weaknesses, we simultaneously assessed our strengths and capacities as a state: the strong professionalism and dedication of Maine educators; a deeply involved and supportive

community and business partnerships; a state DOE that, while relatively small as an organization with each staff person holding multiple roles, stands ready to embrace innovation and to support transformative change; and a newly designed "Office of Innovation" with a team of optimistic, courageous, system-level leaders who epitomize big picture-thinking and who are eager to support the goals of this proposal.

As a Department, MDOE recently issued a public statement of commitment to affirm our intentions and our plans to make sweeping changes to better support *all* students and families.[18] Our statement defined specific goals and objectives and offered robust resources to educators seeking information and strategies for supporting students who have been marginalized under our care. We have developed the project below to support educator empowerment through innovative training, to create a culture of innovation and creative risk-taking, to promote the development of exciting new approaches to remote learning, and—above all—to promote equity and educational excellence for all students in Maine - and beyond.

B. PROJECT DESCRIPTION – MAINE'S RETHINKING REMOTE EDUCATION VENTURE "RREV"

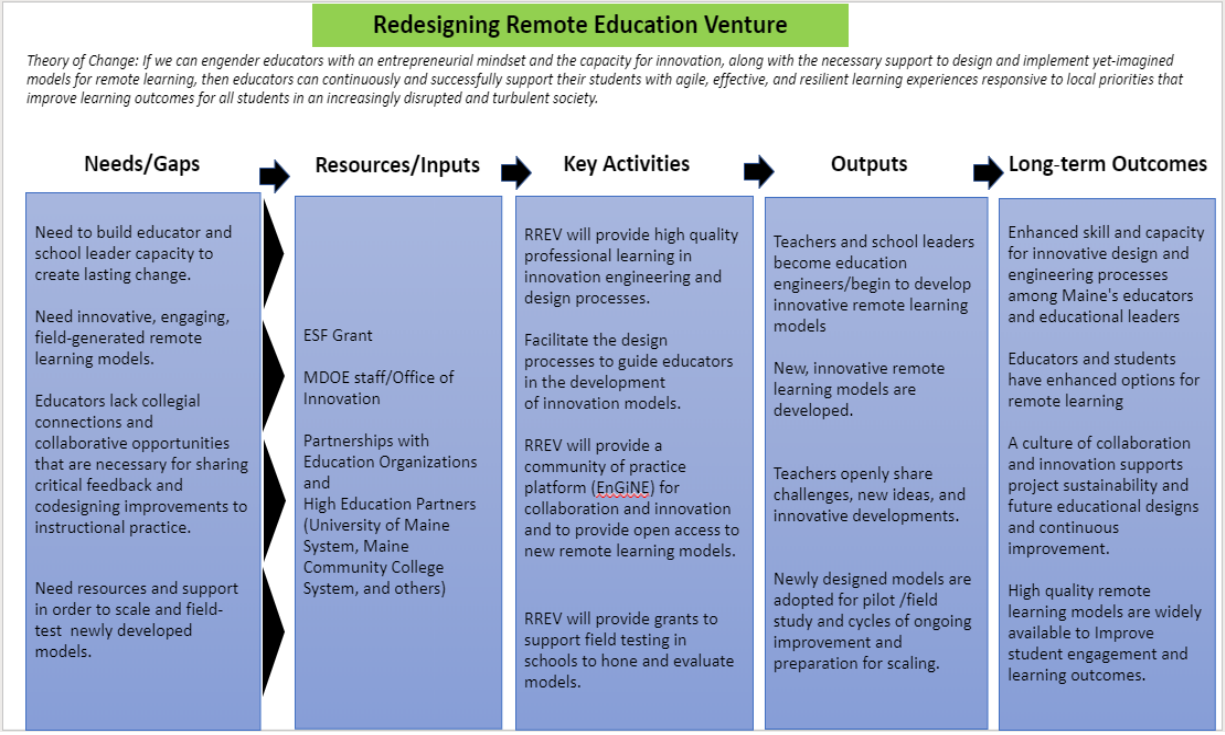
B.1 Rationale / Logic Model

To successfully adapt to the changes caused by the COVID-19 pandemic, it has proven critical that Maine educators be equipped with skills and strategies that empower them to think and respond innovatively. Additionally, the identified gaps and needs in Maine, particularly with respect to remote learning, require that our statewide education system become more effective and resilient. Thus, we endeavor to transform K-12 education into an agile system that meets the needs of remote learners per their local context through educator-driven innovation. As such, our

[18] Maine DOE. (2020, June 6). *Department of Education: Our Commitment and Shared Resources to Combat Racism.* https://mainedoenews.net/2020/06/06/department-of-education-our-commitment-and-shared-resources-to-combat-racism/

project addresses **Absolute Priority #3, *Field-Initiated Remote Educational Models to Improve Student Outcomes*.**

Our strategy honors the following Theory of Change: *If we can engender educators with an entrepreneurial mindset and the capacity for innovation, along with the necessary support to design and implement yet-imagined models for remote learning, then educators can continuously and successfully support their students with agile, effective, and resilient learning experiences responsive to local priorities that improve learning outcomes for all students in an increasingly disrupted and turbulent society.*



We will pursue our goal through a multi-pronged approach, titled "Rethinking Remote Education Venture" (RREV), comprised of four key activities: (1) Providing high-quality professional development to a network of educators; (2) Facilitating design processes to guide the development of innovative field-initiated models; (3) Supporting pilots/field tests by schools to

hone and evaluate the models produced; (4) Fostering a culture of innovation statewide to meet the fast-changing needs of remote learners in an unpredictable, globalized world.

Our team of stakeholders and project designers has worked with community, higher education, and business partners to develop this strategy to realize our goal. While we examined relevant research into how innovative business models develop and the conditions under which they thrive, we ultimately determined that simply the creation of exciting new remote learning models would be insufficient to drive real, sustainable, positive change. To truly succeed, we must foster and support an entrepreneurial mindset among educators: one that not only embraces innovation, but that also encourages educators to become comfortable with healthy risk-taking, uncertainty, and productive failure. Furthermore, we must provide multiple entry points to allow all school staff to find opportunities through differentiated professional growth and learning. Our approach aligns with the principles of Design-Based Implementation Research (DBIR).[19] To power and realize our Theory of Change through our intended activities, RREV features the following design concepts:

1. **Education Engineering Workshops**: professional development in design and innovation
2. **Education Model Categories**: outdoor education, multiple & flexible pathways, extended learning opportunities, online learning, and yet-imagined solutions
3. **Student Accessibility & Participation**: ensuring inclusion of all students and youth
4. **Adopter Schools**: financial support for districts that pilot and collect data on new models

[19] See Bevan, B., Penuel, W. R., Bell, P., & Buffington, P. (2018). Learning, Generalizing, and Local Sense-Making in Research-Practice Partnerships. *Connecting Research and Practice for Educational Improvement Ethical and Equitable Approaches and* Routledge. Fishman, B. J., Penuel, W. R. Allen, A., Cheng, B. H. and Sabelli, N. (2013). Design-Based Implementation Research: An Emerging Model for Transforming the Relationship of Research and Practice. *Yearbook of the National Society for the Study of Education*, 112(2) 136-156. https://eric.ed.gov/?q=&id=EJ1018453

5. **Distinguished Education Engineers**: support Adopter Schools in their home region with coaching and technical support to ensure successful launch of remote learning ventures
6. **EnGiNE**: an online hub that unites educators statewide, forming a vibrant community of practice that shares remote learning models, recommendations, tools, resources, and media content
7. **Integration**: aligning activities and multiple stakeholders across sectors via a shared goal
8. **Agility:** lasting resilience to meet the demands of a fast-changing, unpredictable globalized world

Education Engineering Workshops: MDOE is in the midst of developing Education Engineering workshops for educators early this summer to train a cohort of educators in the design-thinking and venture development processes, so that we have new remote learning models ready for piloting at the inception of RREV. While each innovative design process possesses unique features, all tend to include some common elements. As such, these universal concepts become the focus of the workshops:

1. Clearly defining the problem	6. Overcoming fixed mindsets and other perceived barriers to innovation
2. Overcoming fixed mindsets and other perceived barriers to innovation	7. Generating new ideas, i.e. brainstorming or "ideating"
3. Generating new ideas, i.e. brainstorming or "ideating"	8. Developing prototypes
4. Developing prototypes	9. Alpha and beta-testing to drive iterative improvement
5. Clearly defining the problem	10. Piloting models in the authentic context and continuing to refine and improve them until the model proves optimally efficient and resilient, and thus ready to scale

These workshops involve project-based learning modules that intentionally create multi-cultural, cross-disciplinary teams that tackle problems surfaced by remote learning during COVID-19. Individuals and teams pitch their models to peers for feedback to hone their innovations for the

Fall piloting phase. Participants of these workshops will learn about a variety of design protocols, including "Human Centered Design for Social Innovation", Ureka! Ranch's "Innovation Engineering" method (offered by University of Maine as a 3-course certificate program for entrepreneurs and business people, which we intend to make available to educators in every region of our state), and "Design Thinking for Educators," among others. By the end of the workshops, RREV participants develop not only the competencies and mindset necessary to develop yet-imagined education models, but also the social-emotional and communication skills to lead diverse, multi-disciplinary teams in the future.

Education Model Categories: In each program year, RREV will offer six Education Engineering Workshops, training more and more of Maine's educators in the design and innovation processes, which lead to greater and greater numbers of field-initiated remote learning models. Through our work with statewide stakeholders and research into best-practices, MDOE has identified four promising categories of remote learning that we believe address the various and unique needs of remote learners in Maine. Thus, under the guidance of design process experts, the new remote learning models that participants in our Education Engineering Workshops must incorporate one or more of the following evidenced-based strategies:

1. **Outdoor Education**: While faced with the unique and complicated reality of the impacts of COVID-19 on classroom-based instruction, the need for Outdoor Education Programs seems greater than ever. Outdoor Education is organized learning that happens outside and allows students to interact with the natural environment. With support from existing partners in environmental, nature-based education, as well as from educators using

outdoor education throughout the state, Maine hopes to grow and expand the use of outdoor education.[20]

2. **Multiple & Flexible Pathways**: Multiple and flexible pathways allow students to play an active role in their education by working with their teachers to design the best pathway to meet their learning goals and post-secondary aspirations. Pathways must remain flexible—not lock them into a "track" as students learn, grow, and develop on different timelines and under different conditions. Students with disabilities stand at considerable risk for being assigned to a particular track, with insufficient opportunities to stretch, engage, and challenge themselves.[21]
3. **Extended Learning Opportunities:** Extended Learning Opportunities (ELOs) are designed to align with state Guiding Principles and Maine Learning Results to ensure academic content through experiential, project-based learning. ELOs are the epitome of asynchronous "anytime, anywhere" learning as they can be a part of in-person or remote learning models. ELOs can equally be designed for individuals or small groups and possibly allow students to earn elective credit for activities in which they are already engaged, and when appropriate, be mentored by a community partner who provides a real-world connection. ELOs involve parents from the outset and provide needed support

[20] For information on the importance of outdoor education see: Bensten, P., Jensen, F. S., (2012). The nature of udeskole: Outdoor learning theory and practice in Danish schools. *Journal of Adventure Education and Outdoor Learning*, 12(3), 199 – 219; Williams-Seigfredsen, J. (2017). The Danish Forest School approach. *Early Horizons* 6(1), 8-9; Becker, M. (2016, April 19). 5 Benefits of Outdoor Education. *Edutopia*, https://www.edutopia.org/blog/5-benefits-of-outdoor-education-michael-becker

[21] For information on multiple pathways see: Northeast Comprehensive Center. (2019, Nov. 25). Vermont Agency of Education Research Review. *Vermont Agency of Education.* https://education.vermont.gov/sites/aoe/files/documents/Research percent20Review 0.pdf

and encouragement. Students must honor the four ELO principles: Research, Reflection, Product and Presentation.[22]

4. **Online Learning**: With the sudden suspension of classroom-based instruction in March 2020, Maine educators quickly pivoted to remote learning strategies and showed exceptional commitment—and compassion—as they delivered online instruction in an emergency situation. With the status of in-person instruction in the future remaining unknown, we feel it important to invest in field-initiated models that support innovation in online instruction by Maine educators. Of course, the internet provides a seemingly endless array of options, which, at times, can feel overwhelming. It is important that educators understand how to vet and use proven resources to deliver high-quality learning experiences through online platforms.[23] Educators also require effective strategies to meet the needs of students with disabilities in online environments.
5. **Yet-Imagined:** In the spirit of innovation, we cannot foresee all the possibilities that a team may wish to pursue. Thus, we have defined a category for projects that demonstrate innovative thinking and solutions that may not fall within the other categories.

Student Accessibility & Participation: RREV encourages the development of innovative models for these remote learning options. Recognizing that many students with disabilities and other learning needs found it very difficult to engage in and benefit from the dominant emergency-style remote learning during our emergency shutdown, we intend to employ the

[22] For additional information on ELOs see: Next Steps NH. (n.d.) *ELO: Beyond Classroom.* https://beyondclassroom.org/; Next Steps NH. (n.d.). Next Steps New Hampshire, https://nextsteps-nh.org/

[23] For additional information on online learning see: Ralph, Michael. (2020, April 17) Teaching Strategies of Award-Winning Online Instructors. *Edutopia*. https://www.edutopia.org/article/teaching-strategies-award-winning-online-instructors. Darby, F. (n.d.) How to be a Better Online Teacher Advice Guide. *The Chronicle of Higher Education.* https://www.chronicle.com/interactives/advice-online-teaching, Allain, R. (2020, March 17) Moving your class online? Here's How to Make it Work. *Wired.* https://www.wired.com/story/how-to-make-online-learning-work/

methods and practices, including the Universal Design for Learning (UDL) Framework, that equitably supports all students.

During our first year, we plan to also host an Education Engineering workshop for our Student Cabinet to the MDOE. Our 34 cabinet members represent each of Maine's 16 counties and range in ages from 4th grade to 1st year in postsecondary education. Having worked closely with this group of highly motivated, engaged, and passionate young people, we feel confident that they can devise exciting, perhaps revolutionary, remote learning models for schools to pilot. Assuming that the cabinet succeeds in RREV's first year, we intend to offer annual opportunities to pilot student-developed education models.

Adopter Schools: While our on-going cycle of Education Engineering Workshops promises to produce new education models for remote learning, our rolling grant opportunities provide schools with the financial support to act as an "Adopter School" to pilot and collect data on the models. The grants naturally incentivize and support the adoption of these pilots, covering startup costs for implementing the remote learning model, as well as data collection methods to help evaluate the effectiveness of the models and inform ongoing improvements. We anticipate awarding a total of 30 grants to adopters over the 36-month timeline.

Distinguished Education Engineers: In addition to innovation training and grant support, Adopter Schools will receive technical support and coaching from a Distinguished Education Engineer through the MDOE's Distinguished Educator program. MDOE's Distinguished Educator program offers high-performing educators the opportunity to work as consultants in specialized educational areas for up to two years.[24] MDOE "buys" the educator's contract from

[24] The distinguished educator program (Educator interchange program) is authorized under Title 5 M.R.S. §3003-A. http://www.mainelegislature.org/legis/statutes/5/title5sec3003-A.html

the sending school, provides leadership training and a work plan, and deploys the Distinguished Educator in the field to provide peer support. Educators who complete an Education Engineering professional development training and who pilot one of the remote learning models qualify as a candidate to serve as Distinguished Education Engineers with MDOE for the 2021-22 school year. Distinguished Education Engineers receive additional training in leadership and in Education Engineering. They also represent each of Maine's nine superintendent regions to support local efforts to pilot and adapt new models to a variety of settings and grade levels. Under RREV, the Distinguished Education Engineers support Adopter Schools in their home region, and, through coaching and technical support, ensure a successful launch for new remote learning ventures.

EnGiNE: Adopter Schools not only inspire change in their district, but also share their innovations with the larger, statewide community of practice through the RREV online portal, "EnGiNE." More than a website, EnGiNE ("Engaging Innovation in Education") acts as the heart of RREV's professional learning community, bringing Maine's talented yet decentralized teaching community together and transforming it into a powerful network of remote learning innovators who champion real-world impact and improve student outcomes.

RREV's EnGiNE empowers Maine educators to connect with one another, share ideas and resources for remote learning, and access further opportunities for professional development. Driven by local initiatives, the platform will become a vibrant community of educators and learners, as well as a rich, crowd-sourced hub of remote learning models, recommendations, tools, and resources. Teachers and students also have access to courses, mentorship and certifications, as well as RREV media content. All education models and resources can be adapted to local contexts, enhanced, and re-posted to the EnGiNE platform for use elsewhere

across Maine. RREV will facilitate, not only text-based resource sharing, but also create video stories that capture the pilots happening throughout the state.

In addition to the online opportunities EnGiNE provides, each summer RREV will host an Education Engineering Symposium to showcase the work developed throughout the design and piloting activities. These gatherings allow innovators further opportunity to network, share expertise, and learn from peer educators in Maine. Educators and students will be able to connect in person with remote peers, those they engaged through the EnGiNE platform, and those featured in RREV media. These events will also serve to drive engagement with the wider RREV initiative and foster a sense of enthusiasm and momentum regarding education, innovation, and remote learning in Maine.

Integration: Upon approval of our proposal, as detailed in Section C, RREV development begins immediately and through various coordinated work streams led by a diverse set of stakeholders. First, we will contract to develop EnGiNE, hire a RREV Director and Office Assistant, and establish a chain of command through MDOE's Office of Innovation. Through the first Education Engineering Workshop, our initial cohort of trained experts will pilot the design process for field-initiated remote education models. A late August kickoff event will officially announce the launch of RREV and ensure awareness of the project, its vision, activities, and its opportunities throughout all Maine schools. In September, the RREV team will collaborate with our partners at MADSEC (Maine Administrators of Services for Children with Disabilities), Maine Bureau of Indian Education, our state homeless student liaison, state migrant education specialist, and state cultural responsiveness specialist to develop targeted outreach campaigns to encourage participation from the districts that educate our traditionally underserved populations of students. By December, RREV will have forged bonds between stakeholders critical to the

platform's success and developed early remote learning models with data that demonstrates impact and upside.

By January 2021, we expect to start piloting our most promising models in various schools across our state to test scalability through educator-led action research, student and family surveys, teacher and staff surveys, and student outcomes data. Additionally, Education Engineering workshops will be offered every quarter of the school year and twice each summer for the duration of the grant project, for a total of 16-18 sessions. The grants for Adopter Schools will be distributed at least every six months and on a rolling basis, as new "batches" of innovative remote learning models are developed, tested, and ready to pilot.

Throughout this process, we intend to provide targeted support and opportunities for schools serving students who have been identified as having been under-represented and under-served by our education system. As stated previously, we are committed to improving equity of access to high-quality, engaging, and innovative educational experiences for all students, particularly the most vulnerable. Districts applying for grants to support pilot models will need to demonstrate how they intend to ensure equitable access and meet the needs of students with disabilities. RREV will prioritize candidate districts and schools that outline measurable goals for enhancing the experience for under-served students.

Agility: RREV recognizes that education "should be not only comprehensive, sustainable, and superb, but must continuously evolve to meet the challenges of the fast-changing and unpredictable globalized world. This evolution must be systemic, consistent, and scalable…"[25] Understanding the pervasive challenges that Maine faces to deliver rich remote learning experiences, our project focuses primarily on field-initiated innovations as the catalyst to

[25] Serdyukov, P. (2017). Innovation in education: what works, what doesn't, and what to do about it? *Journal of Research and Innovative Teaching & Learning.* V.10 No. 1. p.433

transform K-12 education. However, RREV goes far beyond one-time solutions, such as providing devices or increasing high-speed internet, as "[w]hen improving online learning, we should not narrow our innovative focus down to only technical solutions in all educational issues. We need to develop a broader look at all aspects of teaching and learning rather than trying to resolve problems and overcome barriers with technology alone."[26] Indeed, RREV is designed as a long-term solution that evolves organically with the needs of Mainers and adapts with them over time as they navigate cycles of disruption and turbulence in their learning.

As it has asked of educators through this project, the MDOE must engender in itself the mindset and capacities inherent to the innovator and entrepreneur, and act as a role model for the creativity and commitment needed to drive systemic, sustainable, long-term change; improve student outcomes; and promote equity and educational excellence for all.

B.2 RREV Performance Measures:

We aim to achieve the following Performance Measures required by The US DOE over the 36-month project timeline: **200,000**: Number of students served by the project; **85**: Percentage of parents who report satisfaction with the available remote learning options; **40**: Number of different types of new remote learning models brought to the field-testing stage.

Project-Specific Performance Measures stand as follows: **500**: Number of schools represented by educator teams involved in Education Engineering trainings, workshops, or courses; **1000**: Number of educators who engage in the design process and/or who contribute to the development of new innovative remote learning models; **85**: Percentage of students who report satisfaction with remote learning options; **85**: Percentage of educators who report competence in the delivery of remote learning

[26] Id. at

C. C. Management Plan, State Capacities, and Adequacy of Resources

C.1 The RREV Management Plan

RREV will operate out of the Commissioner's Office, under our Office of Innovation, which is overseen by the Chief Innovation Officer (CIO) and supported by a dynamic and committed team. The Office of Innovation team will manage RREV's initial setup and implementation until the hiring process is complete. However, upon receipt of the award, MDOE's first steps will include hiring additional staff to manage the project, including a REVV Project Director who will manage day-to-day operations of the grant, a full-time support staff person to assist with documentation and reporting of grant activities, and an experienced and innovative team to develop EnGiNE. MDOE will also publish a request for proposals for an independent evaluator consistent with Maine's competitive bidding requirements.[27] MDOE will work with the evaluator to finalize an evaluation plan to measure the success of the activities throughout the duration of the grant. The evaluation plan will, at minimum, assess achievement of the performance measures and outcomes mentioned above in section B.2. Additionally, MDOE will further establish partnerships with institutions of higher education and other stakeholders related to higher education to develop relationships with like-minded organization to design, coordinate, and run professional development opportunities, workshops, and symposiums. This outreach has already started.

C.2. The extent to which the proposed use of funds will adequately support the proposed project: The attached budget narrative demonstrates that each component of the proposed RREV plan can be fully supported through the funding requested.

[27] The State of Maine's competitive bidding requirements are covered under Title M.R.S §1825-B, http://www.mainelegislature.org/legis/statutes/5/title5sec1825-B.html and Rule Chapter 110, Rules For The Purchase of Services and Awards. https://www.maien.gov/dafs/bbm/procurementservices/policies-procedures/chapter-110

C.3. The extent to which the costs are reasonable in relation to the objectives, design, and potential significance of the proposed project: The proposed innovation-based programming will facilitate the design, development, and field-testing of novel remote learning models accessible to all educators and can dramatically transform the provision of remote instruction for educators in our state and, ultimately, for the nation as a whole. We aim to fundamentally change the way educators think about developing and practicing remote learning, locally, regionally, statewide, nationally and even globally. Concomitantly, and importantly, our intent to develop a statewide network of education engineers who will continue to innovatively rethink and robustly redesign all aspects of educational practice, not only immediately, but also into the future. To that end, the costs outlined in this proposal are reasonable in relation to the proposed outcomes.

C.4. The extent to which the costs are reasonable in relation to the number of persons to be served and to the anticipated results and benefits: We are estimating a direct benefit to more than 15,000 educators who will receive training in the design process or will contribute to the design or beta-testing of innovative new models. The scope of our project will target schools across our state, impacting more than 200,000 students. The anticipated results for educators include: redefining the roles of educators to encourage them to become researchers, designers, and entrepreneurs prompting a statewide culture of educational innovation and healthy and strategic risk-taking. The results for 200,000 students include: equitable access to flexible high-quality remote learning options, improved educational outcomes, increased voice and choice in their educational trajectories; and protection from the possibility of ongoing disruptions, depending upon the coronavirus pandemic or other emergency situations.

RREV Project Management Plan and Timeline

Project Objective	Start Date	End Date	Purpose/Outcome(s)
Hire qualified staff at the MDOE to manage and oversee the grant.			To have qualified staff to manage and run the

• Hire project director	8/1/2020	10/15/2020	grant
• Hire support staff	8/1/2020	10/15/2020	
Responsible Staff: Office of Innovation			
Contract with independent evaluator			To have a qualified independent evaluator in place to evaluate the grant work and outcomes
• Draft RFP and publish RFP	7/1/2020	9/13/2020	
• Award and execute contract	9/14/2020	9/30/2020	
• Create and implement evaluation plan	10/9/2020	7/31/2023	
Responsible Staff: Office of Innovation, Project Director			
Provide Education Engineering Workshops			To host year 1 a student cabinet workshop and host six workshops yearly to promote innovative mindset and skills
• Develop workshops	9/1/2020	7/31/2021	
• Put on workshops	9/1/2020	7/31/2021	
• Evaluate and improve workshops	9/1/2020	7/31/2021	
Responsible Staff: Office of Innovation, Project Director; Distinguished Educator Engineers			
EnGiNE web platform			To establish an environment for educators across the state to share innovation, access resources, create content, and work collaboratively
• Platform Development Team Recruitment and Hiring	7/1/2020	6/1/2023	
• Platform Development Team Project Introduction	9/1/2020	6/1/2023	
• Platform Development Launch	9/1/2020	6/1/2023	
• Platform Development Version 1 Completion	3/1/2021	6/1/2023	
• Platform Field-Testing and Revamp YR 1	3/1/2021	6/1/2023	
• Training Workshops for Platform Use	6/1/2021	6/1/2023	
• Platform Field-Testing/Feedback and Revamp YR 2	6/1/2022	6/1/2023	

Responsible Staff: Office of Innovation, Project Director			
Support professional development in innovation for Maine educators • Hire two temporary staff to development and design of process	8/1/2020	8/14/2020	To support educators in professional development in innovation and design
• Create a catalogue of existing qualified course	8/17/2020	8/27/2020	
• Create process for educators to apply for courses	8/17/2020	8/27/2020	
• Fund the tuition	9/1/2020	7/31/2023	
Responsible Staff: Office of Innovation, Project Director			
Provide Grant Funding for Schools • Draft and publish RFA	8/1/2020 2/1/2021 8/1/2021 2/2/2022	11/11/2020 4/1/2021 11/11/2021 4/1/2022	To support the development, testing, and implementation field-driven projects on remote education
• Award/execute grants	12/1/2020 4/15/2021 12/1/2021 4/15/2022	1/1/2021 5/1/2021 1/1/2022 5/1/2022	
• Monitor grant performance	1/1/2021	7/31/2023	
Staff Responsible: Project manager, support staff, Office of Innovation			
Distinguished Educator Engineers *Staff Responsible:* Project manager, Office of Innovation • Recruit educators	9/1/2020 9/1/2021	10/15/2020 10/15/2021	To increase capacity within MDOE to support schools and educators on innovation and design
• Provide coaching/trainings to the field	10/15/2021	7/31/2023	
Responsible Staff: Office of Innovation, Project Director			
Reports to the US DOE • Quarterly and Annual reports	8/1/2020	7/31/2020	To comply with grant requirement
Staff Responsible: Project manager, support staff, Office of Innovation			