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Kūlia STEM: Increasing the Postsecondary Success of Native Hawaiian Youth with Culturally Responsive Coaching and Mentoring for STEM Pathways

NEED FOR PROJECT

Introduction

This funding proposal details a plan designed by a team at the University of Hawaiʻi at Mānoa College of Education that builds upon the infrastructure we have established across the University of Hawaiʻi Community College (UHCC) System to support Native Hawaiian students to succeed in postsecondary education (PSE). This funding presents an opportunity to deepen the effectiveness of the NHEP-funded Kūlia Support Project (KSP) which we developed and piloted at six UH System campuses from 2018-2020 in an even more impactful way. Our KSP team has already provided coaching, mentoring, training, and other support to hundreds of Native Hawaiian college students who are at-risk of school failure. The scope of work detailed here includes adding a new project focus to promote student exploration, learning, and preparation for employment in the fields of Science, Technology, Engineering, and Mathematics including Computer Sciences (STEM), in which Native Hawaiians are underrepresented. We will build upon the operational foundation of personnel and relationships of the KSP which previously was exclusively focused on providing support for Native Hawaiian college students who are at-risk of failure. By modifying, but not abandoning, our current coaching and mentoring training focus, we will efficiently upgrade our system-wide capacity to add new content and support for Native Hawaiian students who are interested in or focused on achieving employment in STEM fields.

This new project, called KSP STEM, addresses the competition's *Absolute Priority 1(a)* by addressing the needs of at-risk youth, and *1(b)* by working to develop opportunities for Native Hawaiians to pursue careers in STEM fields in which Native Hawaiians are underemployed. Further, this proposed scope of work addresses both *Competitive Preference Priorities* as our proposal (1) "promotes science, technology, engineering, or math and computer science (STEM)

education," and (2) fosters "flexible and affordable paths to obtaining knowledge and skills" in that our activities will "provide work-based learning experiences (such as internships, apprenticeships, and fellowships) that align with in-demand industry sectors or occupations."

Note: *Throughout this proposal we have worked to avoid the appropriation of Hawaiian language and culture for the purposes of 'naming' programs, concepts, and values using 'Ōlelo Hawai'i to imply cultural authenticity. Except for the use of the word Kūlia, with which we have history, we have respectfully left any 'naming' to our cultural experts, partners, and navigators.*

Need for the Services to be Provided or the Activities to Be Carried Out

At the time of this writing, there have been a number of high-profile expressions of Native Hawaiian unity in the form of popular and peaceful protests and resistance to land use decisions that threaten or impede access to culturally or spiritually significant sites. These political mobilizations have been characterized by steadfast commitment to principled resistance, absolute non-violence, and courteous dialogue. These events have effectively generated a resurgence of pride and identity among Native Hawaiians and are a model demonstration of unity, knowledge, and ingenuity. However, while there is much to celebrate and there are countless examples of eminently successful Native Hawaiian individuals in nearly every field of human endeavor, the stark reality is that Native Hawaiians continue to be overrepresented at the lower end of numerous socioeconomic indicators when compared to other major ethnic groups in Hawai'i (Kamehameha Schools, 2014). For example, while Native Hawaiians comprise 23% of the state's total population, they also comprise 39% of its incarcerated population and 38% of students identified for special education. Also, only 14% of Native Hawaiian adults have a bachelor's degree or higher compared to the state average of 29.5%, and 20% of Native Hawaiian youth and young adults are neither enrolled in school nor working, compared to the

14% of youth and young adults statewide. Native Hawaiian households have the highest rate of poverty among all major ethnic groups, the effects of which are especially visible in predominantly Native Hawaiian communities such as Wai'anae (Kamehameha Schools, 2014).

With regard to employment, Native Hawaiians are overrepresented in fields with lower compensation and fewer opportunities for advancement, such as agriculture, labor, and production, and are underrepresented in higher paying occupations such as those in STEM, management, and other professions (Kamehameha School, 2014). The importance of PSE is reflected in Hawai'i data showing that an adult with a bachelor's degree earns $22,763 more on average per year than without a college degree (Kamehameha Schools, 2014). Gains in earnings are also correlated with community college attendance even without completion of a certificate or transfer to a four-year institution (Bahr, 2014), and unemployment is significantly lower for those with a college education compared to those with a high school diploma or less (Daly, Jackson, & Valetta, 2007). PSE can be instrumental in improving career options, earning potential, and quality of life (Dutta, et al., 2009), as well as acquiring critical social and cultural capital necessary to achieve employment, financial stability, and community engagement and participation (Leake, et al., 2006).

Access to PSE is just a step in a difficult journey to graduation. Though the UH System has succeeded in increasing the rate of Native Hawaiian enrollment over the years, a large proportion of Native Hawaiian youth who enter college do so with a variety of needs and challenges that have accumulated over their school careers (Office of Hawaiian Affairs, 2014).

Hawai'i's STEM Workforce Needs. According to the Hawai'i P-20 Partnerships in Education's 2019 Education to Workforce Report, from 2016 to 2026 STEM jobs in Hawai'i are projected to grow 3.7% to 32,000, with about 2,500 STEM job openings annually (Hawai'i P-20

Partnerships for Education, 2019). Most of these jobs will require PSE and training in academically rigorous STEM fields. Due to these projections, Hawai'i's Comprehensive Economic Development Strategy identified STEM education as a necessary area of focus needed to strengthen our local economy (Hawai'i P-20 Partnerships for Education, 2019). Hawai'i's unique economic and historical realities further underpin the intense need to increase Native Hawaiian participation in STEM and STEM-related education and careers as a pathway to opportunity and economic and social stability.

Need to Increase Postsecondary STEM Interest, Preparation, and Participation. Research shows that STEM graduates tend to enjoy better economic outcomes compared to those with degrees in non-STEM fields (Musu-Gillette, et al., 2017). Undergraduates in STEM fields have higher rates of bachelor's degree completion and lower rates of leaving school before degree completion (Cintina & Kana'iaupuni, 2019). After achieving a degree, STEM majors tend to earn significantly more than non-STEM majors regardless of ethnicity (Carnevale, Cheah, & Hanson, 2015). STEM workforce needs offer opportunities for Native Hawaiians to greatly enhance their socioeconomic standing. A major barrier to STEM participation for many Native Hawaiian college students is that they arrive lacking the academic skills, particularly in math, that are required to master STEM content. According to the most recent Smarter Balanced Assessment results for Hawai'i's public schools, only 38.0% of Native Hawaiian students were proficient in reading and 26.3% in math, compared to 54.1% and 41.9% of all public school students (Office of Hawaiian Affairs, 2018). Poor math skills are in turn associated with lower levels of enrollment in the kinds of science courses that spark interest and enhance preparation for entering STEM fields. Instead, Native Hawaiian students at the community college level are overrepresented in remedial and developmental math and English courses and are likely to avoid

science tracks, as many did in high school (Office of Hawaiian Affairs, 2014).

It is not surprising then that fewer than 10% of Native Hawaiian college students choose to major in STEM fields, and those who do tend to have lower GPAs and face greater disparities in comparison to both their non-Native Hawaiian peers as well as their Native Hawaiian peers in non-STEM majors (Office of Hawaiian Affairs, 2014). Supporting Native Hawaiian student success in STEM fields is necessary to better prepare students for the many challenges and opportunities that abound in today's economy. This support also can provide students with viable connections to Hawai'i based career opportunities in STEM related fields.

Need to Create or Expand Culturally Relevant Supports to Increase Interest, Access, Participation, and Employment in STEM. The literature suggests that some of the values imposed by American universities, such as individualism and self-reliance, directly conflict with the values of many first-generation students and function to impede the academic performance and outcomes of these students (Stephens et al., 2012). Many students may not see or value the relevance of a secondary or college education that emphasizes Western cultural values, constructs of knowledge, and systems of learning within a somewhat 'foreign' institutional setting. While students can access numerous 'generic' support services on college campuses, there is an unmet need for culturally appropriate support to address the effects of cultural-institutional mismatches and to support and honor the unique cultural priorities and strengths of this student population.

Need to Increase Student Acquisition of Non-Cognitive Skills for STEM Careers. Many new college students lack both an adequate academic foundation and the non-cognitive factors that are essential for student success. These include study behaviors, perseverance, social skills, learning strategies, academic mindsets, motivation, time management, and self-regulation

(Farrington et al., 2012). Most students who are underprepared for college will lack proficiency in these culturally weighted but essential behaviors, skills, attitudes, and strategies creating a clear need to address the acquisition and or remediation of these non-cognitive factors.

Need to Address Socioeconomic Factors. Due to the high cost of living in Hawai'i, many students must find ways to address competing financial and household support responsibilities while attempting to follow through with their commitments to their education. Many Native Hawaiian students are part of working-class families that operate on values of interdependence and rely on each other for support in various ways (Stephens et al., 2012). In many households, there is great need and often pressure for young people to contribute financially towards household living expenses. Young people are also frequently expected to support their families in other ways such as providing childcare for other households and extended family members. Not meeting these expectations can create uncomfortable situations at home. Moreover, these realities provide the context in which the mindsets of students are formed. It is common for students to tend to family and community obligations, prioritizing these responsibilities over their own individual goals which potentially distracts them and competes with or devalues their efforts in PSE. Eligible students will need comprehensive academic and social support to overcome barriers to their success and to develop new strategies that will help them persevere and make use of the program and university resources to help them overcome the obstacles they encounter in their personal as well as academic lives.

Extent Specific Gaps or Weaknesses Have Been Identified and Will Be Addressed

The above sections detail some of the many needs or gaps Native Hawaiian youth must contend with when considering and preparing for PSE and especially STEM fields of study. The primary needs that we have identified are summarized as: (1) inadequate/inappropriate support

for Native Hawaiian students who are at-risk for school failure; (2) lack of STEM career awareness and exploratory opportunities, resulting in low interest in STEM; (3) lack of quality academic STEM instruction and academic support, resulting in poor skill and knowledge levels necessary for STEM success; (4) lack of flexible career pathways that allow exits from college tracks while gaining relevant skills and knowledge in ways that meet the interests and training of Native Hawaiian youth, such as community STEM practicums and internships which lead to quality STEM employment; and (5) lack of financial resources for attending college or other training programs with STEM options. The intent of our proposed project is to address these needs and thereby effectively support Native Hawaiian youth to persevere in PSE, excel in careers in STEM fields, and grow to become contributing members of their community and their culture. How the project design will achieve this is described in the following section, which highlights *building localized capacity* as a key component.

QUALITY OF THE PROJECT DESIGN

The project design features two mutually supportive prongs. The first prong represents *indirect service to Native Hawaiian youth* by building statewide capacity to address the identified STEM career-related needs of Native Hawaiian youth by collaborating and coordinating with other programs that are developing entry and exit strategies. The second prong represents *direct service* by developing and demonstrating a set of entry and exit strategies, within a rigorous evaluation design, which will be delivered to a convenience sample of Native Hawaiian youth.

By building local capacity and piloting/demonstrating innovative strategies designed to improve interest, awareness, participation, retention, and persistence rates of Native Hawaiian students including those who are disadvantaged or at-risk for school failure, the project will

advance evidence-based practice to broaden STEM participation and achievement within career pathways which are flexible and contain community practicum and internship opportunities. The appropriateness and effectiveness of our design will be demonstrated by the extent to which: (1) modifications or enhancements to the KSP model that value Native Hawaiian culture and home/family knowledge and increase cultural relevance of coursework and career exploration in STEM fields will improve the likelihood that Native Hawaiian students including those who are at-risk will persist and benefit, to the extent they complete an internship resulting in career placement in their field of training; (2) Native Hawaiian Centers (NHC) across the UH System adopt and sustain the KSP STEM training component and STEM pathway content; and (3) the proposed rigorous evaluation design (which has proven effective and sensitive enough to yield quality data) is used to iteratively improve the development and replicability of the model.

Ultimately, the project's significance will be measured by the extent to which the KSP model, as adapted by the KSP STEM Project, results in the anticipated improvements in STEM career interest, academic performance, retention, work experiences, and degrees and certificate completion and career placement rates of Native Hawaiian students including those who are at-risk. The significance of the activities proposed here would be further established if this increased academic achievement and internship participation are also accompanied by improvements in the measurable STEM career/employment outcomes of Native Hawaiians.

Findings Will Be of Value for Other Appropriate Agencies and Organizations. The effectiveness of KSP STEM will be further established by the extent it yields findings of widespread value. Through a UH System-wide collaboration with the UH System 13th Year Initiative (13YI), campus NHCs, or other programs these proposed activities will result in: (1) an effective culturally appropriate and sustainable service delivery and training model; and (2) the

delivery of thousands of hours of direct service for the benefit of 1,000 or more Native Hawaiian students. On each UH campus, NHCs or program(s) are charged with the mission of offering a supportive environment and staff dedicated to the success of Native Hawaiian students and actively preserving and perpetuating Hawaiian culture and values. Most facilities and supports are also available for the benefit of non-Native Hawaiian students as well. NHCs and programs typically offer study space, computer labs and printing, peer mentoring, vested and supportive staff, and are designed and organized around familiar cultural themes and norms. Centers/programs may have obtained additional extramural funding from Native Hawaiian Organizations, federal Perkins Act and Title III grants, and other sources to offer additional supports and services. The 13YI works with and often in NHCs across the UHCC System and encourages non-college-bound youth and adults to attend and successfully complete their first year of college by providing financial and other supports that reduce barriers, with a special focus on Native Hawaiian success. KSP developed partnerships with most of the 13YI programs and saw the adoption of project components in each such partnership.

Identified Needs Will Be Addressed by Building Localized Capacity. The creation of KSP STEM positions at each NHC will significantly increase the staff time available for direct student support activities. The impact of this staff time will be even more dramatic for smaller neighbor island NHCs and programs. The partnership with STEM field professionals to mentor second year students (referred to as 14th Year in terms of formal schooling) will strengthen NHC staff capacity for connecting students to relevant STEM career opportunities through community practicum and internship programs. KSP STEM will also offer professional development activities for faculty, staff and students focused on Universal Design for Learning (UDL), peer mentoring, working with diverse learners, soft skill development, self determination, and cultural

modification. In addition, project staff will offer training for faculty and tutors at each community college NHC regarding best practices for supporting at-risk college students. This training will impact the teaching and learning practices at each campus and is likely to result in better collaboration between instructors, student support personnel, and career placement staff.

Extent Project Will Improve Native Hawaiian STEM Employment Outcomes. A significant improvement in the number of Native Hawaiian students who have access to PSE with adequate supports to earn STEM degrees and certifications may in time reduce the unemployment gap identified above and increase the percentage of skilled Native Hawaiian workers in the STEM workforce. An increase in the number of Native Hawaiians with college degrees will also have a positive generational impact and lessen other barriers to education. Furthermore, an increase in awareness of STEM pathways, availability of work-based learning experiences that align with in-demand industry sectors or occupations, and adequate supports to connect these experiences with academic pursuits will increase successful employment outcomes for Native Hawaiians.

Extent the Proposed Project Demonstrates a Rationale

This project design is based upon strong theory and a solid evidence-base and is planned (see Figure 1) to provide objective data and information, within a field-test evaluation design, yielding results directly related to the intended outcomes. Our KSP initiative was a refinement of our Postsecondary Support Project (PSP) model which was grounded in the following strong theoretical constructs and evidence-based practices: culturally responsive pedagogy and teaching career development practices, critical theory, coaching and peer mediated adaptive supports, inclusive education, self-determination theory, and mindset theory. The project's promising theoretical foundation will then be realized through a collection of innovative activities and partnerships employing evidence-based practice and principles.

Figure 1: KSP STEM Model Design

Kūlia PSP Adapted Support Model Design
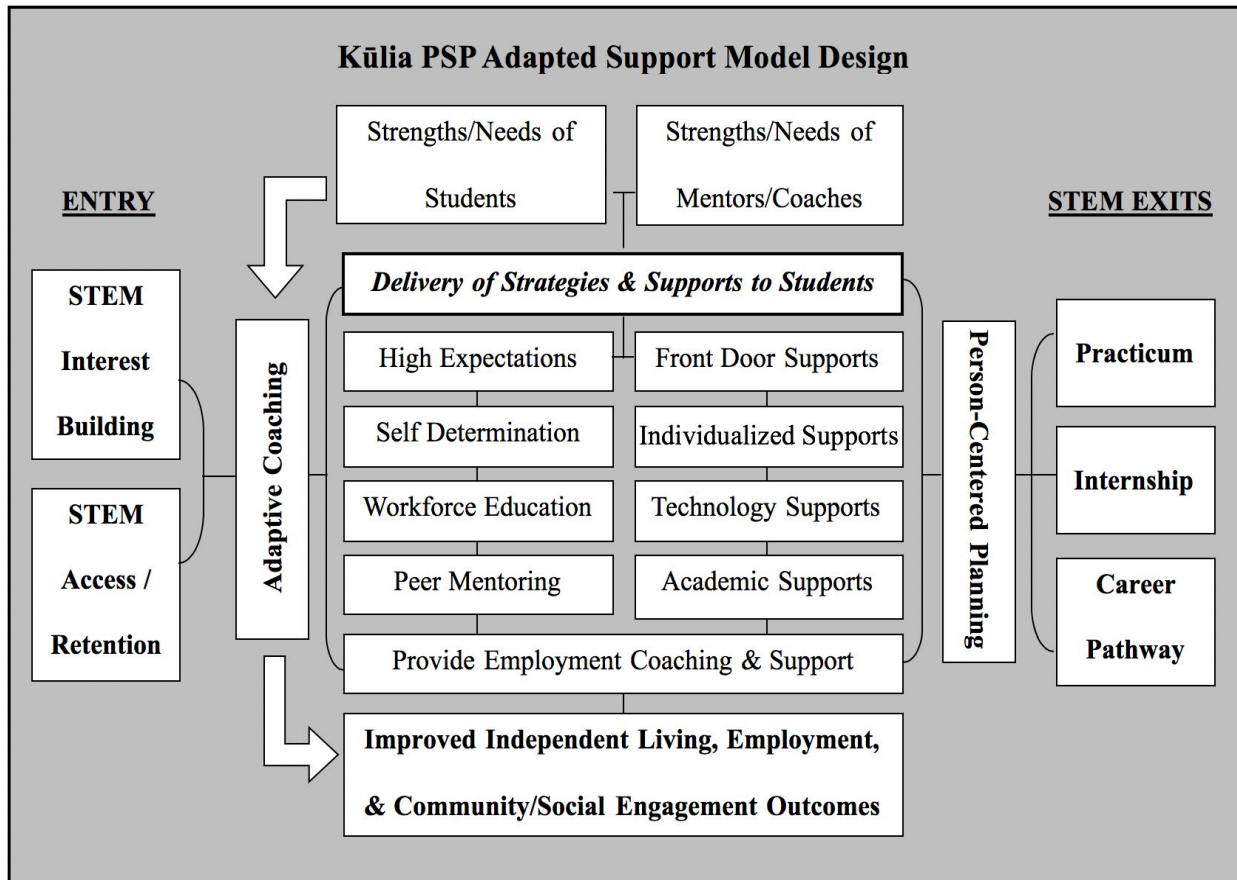
Based on guidance received from the USDOE program officer, we have included our *Logic Model* (in single-spaced table form) as an appendix to this project narrative.

The KSP STEM Logic Model details the development, implementation and evaluation of the project and depicts the relationships between proposed inputs, strategies, and outputs/outcomes of the project. The model also provides guidance for gathering input and using ongoing process evaluation information for continuous quality improvement. The Logic Model will serve as a framework for planning and implementing activities throughout the three years of the project. As activities are implemented, staff can continuously assess the value or intent of outputs as impacting upon projected outputs and outcomes. The following sections (also see Project Management and Evaluation Plan: Goal 5) detail evaluation activities to be used in guiding

project planning and implementation, per the Logic Model. Two strands of evaluation will be applied: performance and support progress (process/formative evaluation), and project outcomes and impact (outcome/summative evaluation). To maximize objectivity, evaluation staff from UHM will conduct all evaluation activities. Project management and performance evaluation will be facilitated through an organizational plan that includes: (1) biweekly team meetings; (2) annual work plans (with goals, activities, timelines, resources needed, projected products and outcomes) for all project participants; and (3) quarterly progress reports (by evaluation staff). A database will be used to track performance and support frequency, the frequency of specific strategies, milestones achieved, and products completed. Quarterly performance reports will include time-event summaries of activities, performance, strategies, and milestones, including primary responsibilities and relationships to supervisors. This system is used to regularly monitor progress on all work, products and adjustments for lags or unforeseen needs. Completed products, products in progress, information contacts, number of hours, and slippage are also noted. This comprehensive system will allow staff to visualize sequencing and interconnectedness of the major tasks and activities outlined in this application. This comprehensive yet simple system allows continuous reporting, activity modification and useful data concerning the prioritization of service delivery activities.

QUALITY OF PROJECT SERVICES

KSP STEM will continue conducting model co-development and adaptation activities through intercampus collaborations between participating NHCs and programs, as well as through partnerships with organizations providing STEM career pathways. We have identified several core partners who have offered their support for this collaboration. Among these are the UH System 13th Year Initiative, Leeward Community College's Native Hawaiian Center at Puʻuloa, Purple Maiʻa, and Waiʻanae High

School's Searider Production Faculty. The 13YI's focus on Native Hawaiian success, its active recruitment and presence in the Native Hawaiian community, and its emphasis on reaching the most underserved populations mean that approximately two-thirds of the students currently enrolled in the program are of Native Hawaiian ancestry. UH 13YI has agreed to collaborate with KSP STEM to offer a "14th Year for STEM" for participants who are interested in or planning to undertake a STEM focused course of study. Students in this program will receive stipends of up to $500 per semester and partner with professional mentors in STEM fields who will also receive a stipend. We anticipate approximately 60 Native Hawaiian students will participate in this collaboration over three years and that we will reach and intensively support an additional 100 students outside of the 13YI initiative. We project that STEM information sessions will reach 300 students over three years. We will impact 250 campus professionals and 150 student workers on-campus through professional development activities. Off campus we will work with 60 STEM field professionals and 50 STEM educators and our dissemination activities will reach another 200 scholars, educators, professionals, or students.

We have identified Purple Maiʻa, which offers "coding and computer science through after school and elective classes to Native Hawaiian students, low-income youth, and others who are underrepresented in tech" as a strong potential partner (Purple Maiʻa, n.d.). The project will benefit from our continued collaboration with the Hulili Ke Kukui Hawaiian Center (Honolulu Community College) and its Poʻi Nā Nalu CTE Program, UH Maui College's Lauʻulu Council and Muʻo Aʻe Program, the I Ola Hāloa Center for Hawaiʻi Life Styles (Hawaiʻi Community College), the Kapo'oloku Program for Native Hawaiian Student Success (Kapiʻolani Community College), and Native Hawaiian Student Services at the UHM.

Partnership, Collaboration, and Synergy (PCS). When funded, our team will initiate an outreach process for identifying potential PCS opportunities on each campus and in our communities. During the

implementation of the KSP Project, our highest priority was to visit each campus and introduce ourselves to the existing projects on-campus that support Native Hawaiian students. From these meetings, we were able to identify ways of working with other organizations so that we did not add duplicative services and could utilize project funding in concert to broaden available campus supports. We have already begun reaching out to new community and campus organizations and have identified multiple potential PCS opportunities. We will also work with our current partners and collaborators.

Current KSP Grant Partners and Collaborators: The UH System 13th Year Initiative (all sites); The Office of the Vice Chancellor for Student Affairs for Kauaʻi CC; The Student Success Coordinators at Hawaiʻi CC (HawCC) and Kauaʻi CC; Honolulu CC's Hulili Ke Kukui Hawaiian Center, the Niuhelewai Scholars Project, and the Poʻi Nā Nalu CTE Program; HonCC's College Achievement and Retention Experience Program; The Muʻo Aʻe Program of UH Maui College (UHMC); The UHMC Lauʻulu Council; UHMC's Kekaulike Student Support Specialist; The I Ola Hāloa Center for Hawaiʻi Life Styles at HawCC; The Hilo One Project (HawCC); The Ēlama Project (HawCC at Pālamanui); The Pālamanui Educational Specialist; The Waiʻaleʻale Project at Kauaʻi CC; The Hālau ʻIke O Puʻuloa at Leeward Community College (LCC); LCC's Lanakila Program; The Kahua Hoʻomau Ola Program at LCC; LCC's Teacher Education Program; Paipai o Koʻolau at Windward Community College; The Lunalilo Scholars Program at Kapiʻolani Community College (KapCC); The Kapoʻoloku Program for Native Hawaiian Student Success at KapCC; Native Hawaiian Student Services at UHM; Academic Advisors for the UHM Hawaiian Studies and Language Programs; UHM's Native Hawaiian Affairs Specialist; Nature Activities for Learning and Understanding Studies; The statewide Hawaiian language immersion program; The Center for Research on Education, Diversity, and Excellence Hawaiʻi Project; Waiʻanae High School's Searider Productions.

Identified Potential PCS Opportunities for KSP STEM: We have identified and, in many cases, contacted the following organizations as potential collaborators or resources. Purple Maiʻa, Joint Base Pearl Harbor-Hickam, Alu Like, Kamehameha Schools (KSBE), The Education Incubator, UH Office of STEM Education, UHCC Perkins IV, Native Hawaiian Education Association, and UHCC Campus STEM Projects.

Building on the PSP Model Foundation. We project that the proposed intercampus collaboration activities will not only identify appropriate modifications to our model but will also result in strategies that are transferable across cultures that can benefit first-generation college students, students from low income households, and students with disabilities who are all at-risk for academic failure.

The basis of the original PSP model that was adapted for use in the KSP and proposed for extension here was previously described in the literature as the Dual Enrollment with Individualized Supports (DEIS) model (Folk, Yamamoto, & Stodden, 2012; Yamamoto, Folk, & Stodden, 2014). The PSP model addresses transition preparation, linkage, and implementation activities to support students with significant learning needs as they progress from secondary education, through college, and on to adult roles in the community. The PSP model consists of 5 model components: (1) An <u>agenda</u> for Self Determination that includes the use of *person centered planning* (PCP) practices to support the student's development of self-determination skills and self-determined visions and goals; (2) a <u>focus</u> on *collaborative teaming* (CT) principles to guide the informed and skilled participation of supporters and service providers in PCP and Interagency Team settings; (3) a <u>commitment</u> to authenticity and full inclusion in all project activities; (4) a <u>philosophy</u> guided by a belief in personal development, growth mindsets, high expectations, and the maximization of personal potentials; and (5) a support delivery <u>plan</u> that is based on equality, adapting roles, and inconspicuous one-on-one coaching and mentoring. The implementation/scaling-up plan proposed for this model will be supported by high-quality training and

technical assistance, as well as rigorous data collection and evaluation, and thorough documentation of the implementation progress.

The following are typical PSP Model Supports that we will adapt for KSP STEM:

(1) Adaptive Coaching to promote the development of academic and non-cognitive skills in coordination with other campus support providers to enable students to understand the expectations of college and work to develop the skills and habits necessary to complete postsecondary courses. KSP STEM will also emphasize student focus on reading, writing, study skills, mathematics, and science.

(2) Provision of information on the range of Federal student financial aid programs and benefits (including Federal Pell Grant awards and loan forgiveness) and resources for locating public and private scholarships; and assistance in completing financial aid applications, including the Free Application for Federal Student Aid (FAFSA).

(3) Education and/or coaching support designed to improve the financial and economic literacy of students, including financial planning for PSE. Education and/or coaching support designed to assist students in applying for and obtaining financial assistance for enrollment in a four-year program of PSE.

(4) Individualized coaching for personal, career, and academic matters. Our proposed program staff (see personnel section of budget narrative) has considerable coaching expertise and experience working in a variety of settings. In the event a participant is facing a personal crisis or mental health emergency, CDS/COE has a licensed clinical social worker who is qualified to provide transitional mental health and personal wellness counseling.

(5) Information, activities, and instruction designed to acquaint participants with the range of available career options and "soft skills" for employment. Our staff members have extensive experience working with at-risk students. We will also partner with and refer participants to our Campus Career Counseling and the Career Development Center.

(6) Coaching for Self Determination and preparation for adult roles. PSP has a dedicated training program that includes a focus on Self Awareness, Self Regulation, Self Efficacy, Self Advocacy, Critical Thinking, Personal Narratives, Problem Solving, Decision Making, Goal Setting, and Mindsets.

The required and permissible activities will be delivered in a number of ways. The following describes several of the specific approaches the staff will use in delivering these supports to students. These approaches have all been developed and piloted through the PSP (CFDA Number: 84.407A) and Kūlia PSP (CFDA84.362A) on all UHCC campuses.

Adaptive Educational Coaching. Educational Coach/Trainers (ECs), Site Coordinators, and STEM Mentors will all be trained to deliver coaching that supports the students' goals and the development of his/her academic and non-cognitive skills. These staff members, when working as ECs, will play multiple roles in their interaction with student participants. When appropriate, they will offer academic and social skills coaching; organization and time management assistance; and support the development of the students' executive and self-regulation/self-management skills. ECs will also support participants to develop key academic behaviors that include regular class attendance, completing assignments on time, being prepared for class, participating in class discussion, and studying outside of class. The coaching target for these students will be 20-60 minutes a week either in-person or over ZOOM.

Peer Mediated Supports. Peer Mentoring is a specific enhanced and sustainable service designed to assist students to successfully transition to and participate in PSE settings. Peer Mentoring, used as a strategy to assist students to adjust to PSE has been noted to provide increased opportunities for adapting to college (Burgstahler, 2001). More experienced same-aged peers can provide a safe and trusting relationship to assist students in accessing resources and other opportunities (Kleinert, et al., 2012).

Professional Mentorship and Work Experiences. The KSP STEM will identify appropriate professionals in STEM fields to mentor KSP STEM student participants. These mentors will be Native

Hawaiian or individuals with extensive knowledge of Native Hawaiian culture who can offer a professional real world view of careers in STEM fields. Mentors will meet students in person several times a semester and when possible may arrange or assist the STEM specialists in finding shadowing, internship, or practicum opportunities for KSP STEM participants.

Program Sponsored Orientations, Workshops and Trainings. In addition to mandatory participation in KSP STEM awareness workshops for new participants, KSP STEM will offer in-term workshops (1-2 hours) and training sessions (2-4 hours) based on projected or assessed student need. These offerings are planned based on student feedback, observations, and hypothesized and anticipated needs for new and/or under-prepared college students.

Program Sponsored Summer Bridge Program. KSP STEM will offer a multi-day summer residential learning opportunity for students. Students will stay in the dorms at UH Mānoa and follow a rigorous training schedule that emulates a full-time student schedule. The content of the training sessions will range from academic and non-cognitive skill development to specific explorations of STEM and STEM related fields.

Philosophical Orientation of Project Materials, Support Delivery, and Staff. The delivery of the above required and permissible services will be influenced by the philosophical orientation of the PSP. The KSP STEM staff will be trained to provide added value to the students support activities they provide. These activities will be infused with a positive pro-social philosophical orientation and will be facilitated by a passionate staff that wants to help participants learn, grow, and succeed in college while modeling strong communication skills and non-cognitive habits.

Employment Coach. KSP STEM participants will also benefit by working with a specialized coach who will provide focused adaptive support based on student employment goals. This person will assist students in understanding the value of work, the expectations of the workplace, how to apply and

interview for a job and other related content. This coach will also support students to find and apply for volunteer, internship, and transitional employment opportunities.

Program Values: "Front Door FIRST Approach." In addition to directly providing focused services and supports to participants, the project will work to promote participant use of other student support services on campus. This approach encourages the student to learn to navigate the campus system to pursue multiple avenues for support that can help them achieve better outcomes. The front door approach is an efficient means of leveraging available support in a way that also emphasizes the supportive climates of our community college campuses.

Program Values: "Setting the Bar High." For most students, going to college involves investing time, effort, and financial resources with the expectation that this investment will pay-off in better employment and life outcomes. Beyond the value of a college's academic content offerings, college offers students valuable opportunities for personal growth and vocational skill development (Folk et. al., 2012). The reasons for this growth likely extend beyond the quality of college instruction and content and have more to do with the expectations and values incumbent in college settings. According to Grigal and Hart (2010), being "part of campus life, taking classes, and learning to navigate a world of high expectations leads to the development of skills necessary to lead a successful adult life." The project's expectations-based approach will help students identify how being a good college student will help them be a better thinker, problem solver, team player, and worker when they graduate. Program materials and student support activities are geared to create and maintain awareness of these expectations among participants and staff by noting "real world" opportunities that illustrated these concepts and by "catching" participants when they met or approached the expectations. It is expected that this focus on high expectations will become part of students' thinking and self-reflective practices.

The described services/strategies employed in the 'traditional' PSP have contributed to numerous

positive employment outcomes and the development of independent living skills for the current participants. In 2019, 49% of the PSP participants were competitively employed in integrated settings. Another 17% of the participants gained volunteer experiences during that same time-period. Participants also demonstrated increased independent living skills, such as accessing transportation, money management, and financial literacy. In 2019's KSP pilot supporting one site's entire roster of 13th YI participants, 76% persisted to the second semester, which suggests a higher rate than the average test comparison of 60.2% first year persistence for 13YI programs and 48.1% for non-13YI students at the same institutions. These findings suggest the promise of the model and the KSP STEM implementation to support Native Hawaiian learners.

QUALITY OF PROJECT PERSONNEL

Extent Employment Applications Encouraged from Traditionally Underrepresented

The University of Hawaiʻi at Mānoa (UHM), which includes the College of Education Center on Disability Studies (COE/CDS), is one of the most ethnically diverse universities in the U.S. COE/CDS practices the recruitment and selection of personnel affirmatively and without discrimination (see GEPA and EEO/AA Statement). COE/CDS has a long history of recruiting, training, and advancing persons from traditionally underrepresented groups. Towards this aim we will: (1) proactively advertise, locally and nationally, to encourage applications from underrepresented groups; (2) assure all meeting and activity sites are culturally, physically, and programmatically accessible to underrepresented groups; and (3) actively recruit persons from underrepresented groups who have requisite skills and experience.

Qualifications, Including Relevant Training and Experience, of Key Personnel

The proposed Key Personnel are current KSP faculty members working with the proposed target population. The Project Coordinator and Project Consultant, as well as the vast majority of support staff, are Native Hawaiian. This project proposal was designed and written by key personnel members

identified below. ████████████████████ (positions described below). ████████ consulted, reviewed, and contributed content.

1. **Principal Investigator and Project Director, Intervention Designer** – ████████ ██ **(.10 FTE).** ████████ holds a master's degree in Educational Psychology with research interest in acculturation, cultural identity development, and self determination. He serves as the Principal Investigator (PI) and Intervention Designer for the PSP and the KSP. ████████ will direct the program on a .10 FTE basis as he currently is the PI for the USDOE OPE funded Postsecondary Support Project, a Model Comprehensive Transition and Postsecondary Programs for Students with Intellectual Disabilities (TPSID) (CFDA Number: 84.407A). ████████ designed much of the PSP conceptual model intervention including workshops, resource materials, philosophical orientation, and training curricula. He will be responsible for the overall fiscal and project management and all personnel and project reporting matters. ████████ also administers the PSP contracts funded by the Hawai'i State Division of Vocational Rehabilitation and The Department of Health Developmental Disabilities Division. These projects share staff, office space, and will often coordinate activities. ████ also works as a professional musician who has performed with numerous luminaries of Hawaiian music and culture including Aaron Salā, Amy Hānaiali'i, Tony Conjugation, Raiatea Helm, and many others. He is also a founding member of The Kaimana Band, a two-time 2017 Nā Hōkū Hanohano finalist.

2. **Co-Principal Investigator** – ████████████████ **(.05 FTE).** ████████ is a Professor Emeritus and founding Director of the University of Hawai'i Center on Disability Studies. Over the past 25 years, he has worked on dozens of successful Native Hawaiian Education grants and has partnered with Alu Like, Inc. on numerous federal and state grants and contracts for the benefit of Native Hawaiians. He has managed or participated in hundreds of other federal educational or evaluation grants

or state contracts. ████████, along with ████████ the Native Hawaiian Education Specialist, and cultural advisors from UH NHCs, will adapt and further develop the PSP/KSP support content and will train the Project Evaluator and others as necessary.

3. **KSP STEM Project Coordinator -** ████████████████████████ **(0.80 FTE).** ██ ████████ will be responsible for the day to day conduct of the KSP STEM program across the state. ████████████ who is Native Hawaiian, taught English to predominantly Native Hawaiian students at Waiʻanae High School for six years before working on the PSP. ████████ distinguished himself as an especially effective evaluator and educational specialist, designing the DCAR data system. He is the Project Coordinator for the KSP and will manage project activities, personnel, logistics, agreements, and budgets for the project in coordination with the PI.

4. **Native Hawaiian Education Specialist - TBH (.50 FTE),** This expert will be selected based on his or her professional background and training within the field of Native Hawaiian education. He/she will work with ████████████████████████████████████ to adapt and customize the KSP model and STEM products and activities to be culturally appropriate and work to contextualize the model to be impactful and build on the strengths and experiences of Native Hawaiian learners and their families. The person selected for this position will also be the primary trainer for site coordinators and coaches.

5. **STEM Program Specialist – (1.0 FTE). To be hired.** This staff person will coordinate and manage all STEM focused activities. This individual will be responsible for outreach to STEM mentors, maintaining network connections and generating STEM internship, mentorship, and career opportunities. The STEM Specialist will also design and develop content for the summer bridge program and informational STEM workshops. We anticipate recruiting at a junior faculty level for a person with qualifications that include a background in education, human resources, and project

management.

6. Internal Evaluator – (.10 FTE). To be hired. This staff member will manage and maintain the project's cloud-based Data Collection, Analysis, and Reporting (DCAR) system and conduct the proposed evaluation and reporting activities.

7. Site Coordinators – Up to 6 people at (.45 FTE). To be hired. Site Coordinators are UH system employees based at each college's NHC who will coordinate site service activities and provide transition support for students transitioning to college and provide training and oversight to site coaches. Site Coordinators will work with project leadership to implement the project's activities on each campus and work directly with students as needed.

8. Coaches – Up to 7 people at (.35 FTE). To be hired. Site Coaches are UH system employees based at each college's NHC who will offer direct on-campus support for project participants and provide transition support for new students transitioning to college.

9. Administrative Support – ████████████ **(.15 FTE).** ████████████ holds a Bachelor of Business Administration, will provide administrative staff support to the KSP STEM Project. This includes processing contracts, payments, stipends, reimbursements and bookstore invoices.

10. Graduate Assistants – (.50 FTE). To be hired. Graduate assistant will perform a variety of project-based roles. They will be charged with undertaking academic research, performing data entry and analysis, providing technical assistance, and in many cases providing direct support to project coaches and participants. Project resources will be used to invest in training promising future researchers and practitioners who are interested in Native Hawaiian education.

Project Consultant - ████████████████████ **(Hourly Fee)** ████████ has a PhD in Developmental Psychology with a research focus in Native Hawaiian educational practices. As a Native Hawaiian scholar and a fluent speaker of Hawaiian language, ████████ is a proponent for culture-

based and culturally appropriate teaching strategies and has worked in the field of Native Hawaiian education for the past 16 years. She was formerly the director and PI of the Center for Research on Education, Diversity, and Excellence (CREDE) Hawaiʻi program, which provided professional development to P-12 teachers of Native Hawaiian and other culturally and linguistically diverse learners. She is a Native Hawaiian Education expert and works elsewhere as a Native Hawaiian Cultural Assessment Specialist and Research Evaluation Consultant. She will work with the Native Hawaiian Education Specialist and UH NHC personnel to continue to adapt and customize the KSP/PSP model. ███████ will also assist the Native Hawaiian Education specialist and site coordinators and coaches and will work closely with the NHCs and members of the communities in which she works.

QUALITY OF THE MANAGEMENT PLAN

Adequacy of Management Plan to Achieve Objectives on Time and within Budget

The Project Management and Evaluation Plan clearly defines responsibilities, timelines, outcomes/results, and evaluation approach for each project task. As detailed further below, this plan will serve as the basis for regularly evaluating progress and addressing identified barriers. Each year the plan will be updated with adjustments designed to assure on-time achievement of objectives within budget.

Adequacy of Mechanisms for Ensuring High-quality Products and Services

The project coordinator and evaluation specialist will monitor quarterly evaluation reports from team members. These reports will be summarized within semiannual evaluation reports focused on milestones reached and outcomes obtained. Each semi-annual report will include recommendations for improvement within each of the project objective areas. Evaluation personnel will provide continual feedback to the project team to ensure any lags in work-scope and timelines are addressed quickly and constructively. These recommendations will be reviewed by the entire project team, and appropriate steps will be taken to improve project performance. Ongoing assessment data will be summarized

annually to meet federal reporting requirements, which also address Government Reporting Requirements for this funding priority.

Project Management and Evaluation Plan

Administrative Tasks to Launch Project. In months 1-2, the principal investigator (PI) and project coordinator (PC) will establish the fiscal structure of the grant. In months 1-4, they will recruit and hire project personnel, confirm that staff are qualified for their positions, and the PI/PC will develop campus agreements and confirm all are signed.

GOAL 1: Build Partnerships to Develop Support Capacity for STEM Education and Career Pathways. *Objective 1.1: Build campus-based teams and workgroups.* In months 1-6, the PI, Native Hawaiian Education Specialist (NHES), and STEM program specialist (SPS) will design STEM model attributes, adapting coaching strategies to align with the needs of the target audience and the interests of all stakeholders and data. They will ensure the strategies and project activities align with standards for attainment of college performance expectations and work with the evaluator to ensure alignment with evidence-based criteria in months 6-10. Feedback will be obtained from community member experts in related fields to further validate the STEM model content in months 10-12. *Objective 1.2: Support and facilitate a team vision of the STEM content and process.* Months 3-6 will see the PC and specialists work with the site coordinators (SCs) and peer coaches to collect student evaluations of STEM interest building and access/retention activities. *Objective 1.3: Provide teams/workgroups information, training, and facilitation supports.* Beginning in months 6-10 and continuing throughout the project, the PC will review student participation and performance data, and obtain required products and evaluation forms.

GOAL 2: Develop/Deliver Professional Development (PD)/Technical Assistance. *Objective 2.1: Design STEM PD activities for site coordinators and peer coaches.* In months 4-9, the PC and specialists will confirm PD materials contain comprehensive STEM strategy information. *Objective 2.2:*

Assess feasibility of PD activities (time/fit with each site's context). SCs and specialists will plan and create PD package in months 3-9 and confirm alignment of strategies to Native Hawaiian student needs and strengths and STEM content standards in months 6-10. *Objective 2.3: Conduct a test of the feasibility of PD activities supporting implementation of coaching strategies for STEM coursework.* In months 8-12, the specialists, SCs, and peer coaches will obtain feedback on feasibility of PD materials supporting implementation of coaching strategies for STEM coursework. The evaluator will collect and examine feedback on the feasibility use of strategies and revise strategies for field test protocol.

GOAL 3: Implement and Test Coaching Strategies and Activities for STEM Outcomes.

Objective 3.1: Generate and refine critical variables to be addressed in the implementation. Beginning in month 10 and continuing throughout the project, specialists and evaluator will train SCs, peer coaches and professional STEM mentors in field test implementation of protocol and instruments. Following this training, they will be included in supporting participants in feasibility test activities. *Objective 3.2: Team will select data gathering methods and participants for feasibility analysis.* Specialists and evaluator will confirm delivery of coaching strategies for STEM outcomes and availability of relevant feasibility test data, as well as providing and documenting necessary support and training for involved participants starting in month 12. *Objective 3.3: Adapt and/or design pre-post assessment instruments* (Months 6-10, evaluator). *Objective 3.4: Identify expansion sites to receive STEM coaching strategies.* PC and evaluator will assess readiness of field sites and select students at each site in months 8-10. *Objective 3.5: Collect feasibility data and collect data on project expansion.* Beginning in month 12, evaluator and graduate assistant (GA) will collect pre/post data and report to project leaders and STEM mentors.

GOAL 4: Deliver Systemwide Scope and Sequence of Aligned STEM Activities. *Objective 4.1: Deliver supplemental STEM coaching strategies and activities using a protocol to guide the expansion/implementation across the UHCC system.* Beginning in month 12, evaluator will examine

field test implementation data for effectiveness and impact. *Objective 4.2: Monitor intervention parameters and facilitate on-going collection of fidelity data*. Evaluator and specialists will gather fidelity data on implementation from month 20 onward. *Objective 4.3: Refine field test protocol and develop guide for expansion/replication package* (Evaluator and specialists, from month 23). *Objective 4.4: Support SCs and peer coaches to deliver STEM coaching strategies within the system-wide implementation design* (Specialists, from month 26).

GOAL 5: Determine Effectiveness of Delivery of STEM Strategies. All objectives for this goal will start in month 20. The evaluator, SCs, and peer coaches will collect student data, the evaluator and SCs will also prepare to analyze data for reviewing the value of interventions and project activities, and the PI, PC, and SCs will recheck data set for missing subjects and other data. *Objective 5.1: Collect/analyze pretest data about delivery of STEM strategies*. Evaluator will conduct data analysis starting in month 20. *Objective 5.2: Collect/analyze post-semester (16 week) test data regarding the delivery of STEM coaching strategies on a UHCC system* (SCs/peer coaches, from month 20). *Objective 5.3: Administer pre, mid, and post assessment with participating and non-participating students on each campus* (Evaluator, SCs, from month 4 to 23). *Objective 5.4: Use data to make continuous improvements to project design* (All, from month 23).

GOAL 6: Plan for Sustainability and Statewide Dissemination within UHCC System. *Objective 6.1: Promote Availability of Sustainability Guide for use of Tested STEM Mentoring Strategies after the project funding ends*. PC and SCs will monitor website and survey site persons starting in month 20, when the evaluator and SCs will also interview site admin/staff implementing strategies to confirm results on interest and usage. The evaluator will interview system administrators to collect data on interest and use of strategies and sustainability guide. *Objective 6.2: Distribute sustainability and replication materials to administrators and support personnel to each UHCC system campus – provide*

training and technical assistance as necessary to support sustainable use of the coaching strategies. PC and specialists will provide web-based links, technical assistance, and training starting in month 12 to collect data on extent to which staff use tested coaching strategies. *Objective 6.3: Develop website and make links for distribution of sustainability and replication materials to each UHCC system campus.* Starting in month 24, evaluator will support all staff to make contacts with site admin/staff to collect impact data on student performance in UHCC system. *Objective 6.4: Follow-up with each campus on the implementation success of distributed sustainability plans and provide replication or other training as requested.* PC will distribute (mail and web) data on number of users to site admin/staff in Month 30.

QUALITY OF THE PROJECT EVALUATION

Quality of the Project Evaluation to Be Conducted

The quality of the project evaluation will be assured as a result of: (1) conducting both formative and summative components as commonly recommended for program evaluations (Smith, 2010; US General Accounting Office, 1998); (2) being designed for the purpose of continuous quality improvement, which involves specifying benchmarks, persons responsible, and timelines as the basis for assessing progress and addressing any identified barriers; (3) obtaining approval of the University of Hawai'i Social and Behavioral Sciences IRB by demonstrating adherence to requirements for the treatment of human subjects; and (4) being coordinated by an experienced program evaluator.

Extent Evaluation Methods Will Provide Valid and Reliable Performance Data

Outcome evaluation activities will be conducted internally and externally to produce information in the areas of: (1) quantitative outcomes and (2) qualitative outcomes that address the social validity and pedagogical effectiveness of the strategies developed by the project. Quantitative measures will reflect progress in developing and testing project strategies, such as: number and type of strategies completed, number of participants, and participant ratings of materials and resources. Qualitative data collected will

include reviews of strategies, activities, and outcomes by administrators, educators, cultural experts, and others. Teacher and student input will be analyzed as part of a feasibility test and a field test. The most critical evaluation concern will be to assess the effectiveness of project strategies to impact Native Hawaiian youth, measuring gains in skills, knowledge, and values that result in improved rates of access, retention, and program completion aligned with entry into gainful employment *(student outcomes).* The evaluation will take place through a field test of the developed coaching strategies over the course of one or more school years. Other nonparticipating Native Hawaiian students will benefit from the project through the provision of system-wide training and dissemination of strategies. Measures will include: (1) assessments of student knowledge of relevant math/science/reading content and Native Hawaiian values employed within the scope and sequence of cultural activities, given at the beginning, middle, and end of each project year; (2) self-reported admission and attendance records and class participation (reflects school engagement); (3) course grades; and (4) student, teacher, and parent versions of participation and satisfaction surveys (at beginning and end of each semester).

Other measures will be developed by an evaluation team that will channel stakeholder input and guide evaluation. The project's Data Collection, Analysis, and Reporting System (DCARS) will be used, consisting of an extensive interconnected series of secure cloud-based spreadsheets. The DCARS platform allows project staff to gather information about supports provided, evaluate their impact, identify areas for improvement, and illustrate efforts taken to make adjustments. Users will interact regularly with (ID coded) logs for each participant, which can be used to record participant or coach actions. These logs automatically send data to tables and charts that can be used for both analysis and reporting, depending on need. Other logs are kept for specific supports such as employment. DCARS allows timely reporting that empowers the team to collaborate with community partners and other support agencies and assists project staff to identifying areas for participant and coach training. The

ability to pull data from one online spreadsheet file to another makes data management feasible beyond what can be achieved using hard drive-based programs such as Microsoft Excel. The system also utilizes data validation tools that ensure accurate data submission.

The authors of this proposal thank you for your careful consideration of our project. We hope that our passion for this work and our sincere aspirations and commitment to it was evident in these pages.