

Application Submittal Checklist

The following items are required for submittal of the grant application. Please verify and check off that the items have been included in the application packet.

- 1) Certificate of Good Standing (If the Applicant is an Organization)
- 2) Declaration Statement
- 3) Verify that grant shall be used for a public purpose
- 4) Background and Summary
- 5) Service Summary and Outcomes
- 6) Budget
 - a. Budget request by source of funds ([Link](#))
 - b. Personnel salaries and wages ([Link](#))
 - c. Equipment and motor vehicles ([Link](#))
 - d. Capital project details ([Link](#))
 - e. Government contracts, grants, and grants in aid ([Link](#))
- 7) Experience and Capability
- 8) Personnel: Project Organization and Staffing


AUTHORIZED SIGNATURE

Leslie Wilkins, President & CEO
PRINT NAME AND TITLE

1/17/19
DATE

Grant in Aid - Fiscal Year 2020

**Submitted by:
The Maui Economic Development Board, Inc. STEMworks™ Program**

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I. Certification – Please attach immediately after cover page

1. Certificate of Good Standing (If the Applicant is an Organization)

See Attachment A: Certificate of Good Standing

2. Declaration Statement

See Attachment B: Declaration Statement

3. Public Purpose

(1) The name of the requesting organization or individual:

Maui Economic Development Board, Inc., STEMworks™ program

(2) The public purpose for the grant:

The mission of STEMworks™ is to provide students and teachers resources, inspiration, and tools that empower them to improve their community and the world. The purpose is to build Hawaii's future workforce through a leveled and layered approach; the proposed project expands opportunities for teachers and students to be exposed, explore, and become immersed in STEM pathways through a multifaceted, year-long educator and student professional development, career awareness and work-based learning programmatic plan.

(3) The services to be supported by the grant:

See Attachment C: Timeline Program At A Glance

(4) The target group:

200 K-12 DOE public/public-charter teachers and 7,125 K-12 DOE public/public-charter students from the islands of Lanai, Maui, Molokai, Kauai, Hawaii Island and Oahu.

(5) The cost of the grant and the budget:

Grant: \$598,000 Total Budget: \$2,051,000

II. Background and Summary

1. A brief description of the applicant's background:

The applicant, Maui Economic Development Board (MEDB), was established in 1982 as a private, not-for-profit 501(c)3 organization. Its mission is to provide leadership and vision in the state for the responsible design and development of a strong and diversified economy. MEDB has worked to develop and support high growth/high wage innovation industries while working

to build a qualified, resident workforce to fill the demands of Hawaii's growing and emerging technical sectors.

In 1999, MEDB launched the Women in Technology Project (WIT), now officially known as STEMworks™, which has been at the forefront of developing progressive, work-based learning K-12 educational initiatives that build and strengthen the science, technology, engineering, and math (STEM) education to workforce pipeline, while engaging more girls/women and underrepresented groups into STEM careers. Funded in part by the U.S. Departments of Labor, Education, Office of Naval Research, industry, private donors, and the County of Maui, MEDB is led by a Board of Directors, whose board members include leaders from academia and government and who represent a cross section of the state's industry sectors, including emerging STEM fields. The Board made the strategic commitment to dedicate half of the organization's annual \$5 million budget each year towards strengthening the STEM education to workforce pipeline to align with targeted economic development.

MEDB created STEMworks™, an original place-based, home grown innovative program that reflects Hawaii's cultural values. Currently, MEDB's STEMworks™ initiative includes 32 diverse STEM programs and original curriculum serving over 40,000 participants spanning every island in the state. The mission of STEMworks™ is to provide students and teachers resources, inspiration, and tools that empower them to improve their community and world. STEMworks™ has developed an equity centered education model that reflects Hawaii's rich demographic diversity (i.e., ethnicity, race, gender, culture, socioeconomic status, and student learning styles). The hallmark of STEMworks™ successful engagement has been the alignment of culture and science and the facilitation of industry/education relationships. The use of project-based service-learning, career exploration, and workforce learning have been the foundation for training teachers and engaging Hawaii's diverse student population.

STEMworks™ ensures that teachers are equipped to develop students' technical and professional career skills, as guided by industry needs, to grow the next generation of local business and community leadership on the islands of Oahu, Kauai, Maui, Lanai, Molokai, and Hawaii Island. The breadth of teachers across disciplines engage students in the engineering design process through use of industry standard software and STEM tools. Students develop career ready skills in areas such as cybersecurity, digital media and graphic design, healthcare, drone technologies, circuitry and hardware, computer science & coding, geographic information systems (GIS), robotics, computer-aided design (CAD), 3D printing, virtual reality, watershed education, clean energy, and agriculture.

From kindergarten to twelfth grade, STEMworks™ incorporates the Next Generation Science Standards (NGSS) in engineering design, Common Core State Standards (CCSS) in literacy and math, Career and Technical Education Standards (CTE) and is further grounded in Hawaii DOE's Nā Hopena A'o (HĀ) framework and ISTE technology standards. In 2018, the statewide

STEMworks™ program trained 80 teachers, spanning 30 elementary, middle and high schools across the state, serving 4,100 students, providing a ready-made infrastructure for future successful expansion to more schools in subsequent years.

In 2017, Code.org contracted STEMworks™ to be a Regional Partner to expand quality computer science education to every child in Hawaii. Code.org's nationwide network provides administrative training supporting STEMworks™ with the tools and resources to cultivate a local, qualified cohort of computer science professional development facilitators. To date, STEMworks™ has trained 101 Hawaii teachers. Forty-eight middle and high school educators from across the islands are participating in Code.org's year-long Professional Learning Program and have successfully implemented the innovative computer science (CS) curricula supporting student computational thinking, problem-solving, teamwork and communication skills. In addition, STEMworks™ trained 57 elementary teachers in order to build Hawaii's K-12 computer science educational pipeline. STEMworks™ will continue to expand computer science reach to middle and high schools kicking off the 2019-20 Code.org Professional Development Program with Hawaii TeacherCon 2018.

2. The goals and objectives related to the request:

The key goal of STEMworks™ is to develop the education to workforce pipeline that will equip workers with employability skills and engineering and technical talent to lead the next generation in developing solutions for Hawaii. STEMworks™ addresses this multifaceted challenge (preparing a well-equipped local workforce that can apply technology to design solutions) through the teacher accredited STEMworks™ professional development courses and ongoing STEMworks™ program structure where:

Objective 1: STEMworks™ trained teachers engage students in the engineering design process in their classrooms to support students in developing career ready employability skills as they build collaborative team responsibilities in their classrooms.

A. STEMworks™ teachers utilize engineering design process through project-based applications to:

1. Expose and spark an interest for students in STEM.
2. Develop student employability skills, critical thinking and problem-solving abilities.
3. Promote soft skills through student collaboration, communication, and leadership skills to build collaborative team responsibilities in their classrooms.
4. Create products, inculcating students' sense of responsibility and stewardship for peers, their local community, Hawaii, and the world.

Objective 2: STEMworks™ trained teachers employ industry aligned STEMworks™ practices and tools with students including: a class environment of equity, which supports gender equity

and cultural diversity in STEM roles and projects; application of industry aligned technology; and industry connections and/or experiences.

- A. STEMworks™ teachers employ strategies to increase capacity in equity and progressive teaching methods that transcend multiple subjects while exploring and integrating industry standard/career ready technology in their classroom.
- B. STEMworks™ teachers utilize industry aligned technology and industry connections and/or experiences with training and tools that are provided by STEMworks™ for students during the year to support STEM career exploration and project growth by:
 - a. Training and support for STEMworks™ students in learning industry-standard hardware, software, and tools, and technologies and;
 - b. Industry exposure and immersion experiences STEMworks™ students to facilitate mentoring and real world experiences, including opportunities such as: webinars, software training, and STEMworks™ internships.

Objective 3: Through the STEMworks™ Regional Partnership with Code.org, trained teachers will increase equitable access for students of high need as well as the capacity of computer science literacy for students across Hawaii.

- A. In leveled K-12 workshops, teachers are provided with and trained in high quality curricula aligned to national computer science standards that will increase the capacity of computer science literacy for students. Middle and high school training includes an intensive week long computer science literacy course called TeacherCon in addition to support with quarterly workshops throughout the school year.
- B. To provide equity of access, the program has a priority to recruit and train teachers in schools of high need, so these student populations have access to computer science literacy programs. To ensure access, for middle and high school, school principals must approve the course in the master schedule with their commitment to recruiting a diverse group of students, representative of the overall demographics of the school.

MEDB's STEMworks™ original curriculum is a vehicle for teachers across the state to facilitate students' STEM concepts while enabling students to create products and evaluate highly relevant information about data, project design, and impact of solutions in their island communities. It maintains a place-based foundation, with relevance to Hawaii's culture, geography, future STEM career growth, and unique island challenges. STEMworks™ encourages students to use critical thinking skills to solve problems, to ask relevant questions about the subject matter they are learning, to practice collaboration and responsibility to their team, to develop employability skills, and to successfully develop and test their solutions to real-world challenges through hands-on, project-based learning. Using the STEMworks™ curriculum, an industry aligned program, students tackle addressing community needs, challenges and issues by developing innovative solutions.

3. The public purpose and need to be served:

In order to meet the need for a talented, technical workforce in Hawaii, local students must develop employability skills alongside technical skills to pursue educational and career pathways in science, technology, engineering, and math (STEM). MEDB, in collaboration with EDAH, convened more than 800 stakeholders across the state to produce Hawaii's 2016-2021 Comprehensive Economic Development Strategy (CEDS) findings, identifying the following barriers: struggles of companies to fill technical vacancies with local talent, lack of adequate pipelines for developing such talent; supply of local tech graduates inadequate for current demand/projected growth across all sectors of our economy. STEMworks™ curriculum uses community needs cards as project foundations, these tools were established using CEDs data from industry sectors; students are challenged to find solutions to industry identified needs using high end tools and the STEMworks™ Engineering Design Process toolkit (STEMworks™ EDP) in their classrooms.

The U.S. Department of Labor's Workforce Innovation and Opportunity Act (WIOA) State Plan for the State of Hawaii FY-2018, <https://www2.ed.gov/about/offices/list/osers/rsa/wioa/state-plans/hi.pdf>, outlines the skills needed for employability in Hawaii, including the Info Tech and Healthcare industries. The 2014- 2024 projected skills requirements for job openings in Hawaii include employability skills such as: Mentoring, coaching, flexibility, adaptability, problem-solving, initiative, teamwork, active listening, communication, strong work ethic, dependability, reliability, time management, empathy, organizing, relationship building, negotiation, creativity, speaking, reading comprehension, coordination, critical thinking, monitoring, resource management, judgement and informed decision making, social, coordination, and perceptiveness. STEMworks™ curriculum has designed oration toolkits, and equity team role cards to coincide with the STEMworks™ EDP toolkit which support the development of employability and soft skills. Through the lens of service learning for Hawaii, students are challenged to collaborate and reflect on their success and responsibility to teams, identifying personal growth and areas for improvement in employability skills.

From 2016-2026, the top fifteen STEM occupations in Hawaii are projected to grow anywhere between 23-90%. These occupations include, but are not limited to: solar photovoltaic installers, health care, software developers, and information security analysts. (Hawaii State Department of Labor and Industrial Relations, Research and Statistics Office, July 2018 <https://www.hiwi.org/gsipub/index.asp?docid=423>). Furthermore, DBEDT and its partners projected the Alternative Power Generation sector as the highest emerging technology field from 2007 to 2017, aligning with Hawaii's renewable energy goal of 100% goal by 2045. While the growth is slow, jobs increasing 9.7% within ten years, it is projected to increase in the following years compared to other technology sectors. (Department of Business, Economic Development and Tourism, Hawaii's Targeted & Emerging Industries: 2017 Update. http://files.hawaii.gov/dbedt/economic/data_reports/emerging-

[industries/Hawaii Targeted Emerging Industries 2017 Update Report.pdf](#)). Nationally, according to the U.S. Bureau of Labor Statistics, April 2018, the Occupational Outlook Handbook, the top five projected new jobs for 2016-2026 (<https://www2.ed.gov/about/offices/list/osers/rsa/wioa/state-plans/hi.pdf>) includes software developers and registered nurses. The top ten fastest growing occupations includes clean energy (solar PV installers, wind turbine technicians), healthcare (aides, assistants, nurses, physicians), statisticians, software developers and mathematicians. Software developers, mathematicians, and physicians are projected to have over a 40% greater median pay than health aides and <https://www.bls.gov/ooh/fastest-growing.htm>. STEMworks™ prepares students for a local workforce with skills that are nationally competitive; STEMworks™ program provides students with technical training and career pathway exploration in STEM software and tools through workshops, Nepris, career shadowing, internships, and access to STEM tools in their classroom through the STEMworks™ Lending Library and STEM labs. This training, access and practice develops pathway awareness and lays a foundation for the technical experience of utilizing high end tools to solve local problems. Having relevant work-based learning opportunities builds a pathway into STEM occupations.

Hawaii currently has 1,318 open computing jobs with salaries averaging \$80,734 for computing occupations, significantly higher than the average salary in the state (\$49,430). According to the 2018 State of Computer Science Education (<https://advocacy.code.org/>) “High schools with higher percentages of underrepresented minority students are less likely to teach computer science,” and Hawaii’s student population is ethnically diverse, but, “States that have provided funding for teacher professional learning in computer science have more high schools that teach computer science.” Therefore through the STEMworks™ Regional Partnership with Code.org, teachers using computer science based curricula and training will increase equitable access for students of high need as well as offer courses in K-12 schools to increase the capacity of computer science literacy for students across Hawaii.

According to a 2017 report, the Economics & Statistics Administration United States Department of Commerce found STEM workers command higher wages, earning 29% more than their non-STEM counterparts in 2015. Additionally, nearly three-quarters of STEM workers have at least a college degree, compared to just over one-third of non-STEM workers. (STEM Jobs: 2017 update. Economics & Statistics Administration United States Department of Commerce (<http://www.esa.doc.gov/reports/stem-jobs-2017-update>)). Despite the high demand for STEM workers and the incentive of a well-paying career in the field, the United States still struggles to sufficiently and equitably inspire students to pursue STEM. In Hawaii’s 2018 graduating class, 43% of males compared to 17.4% of females identified that they were interested in pursuing a STEM career (Hawaii’s 2018 STEM Report Card (2018) The Alliance for Science & Technology Research in America (https://www.usinnovation.org/state/pdf_cvd/ASTRA-STEM-on-the-Hill-Hawaii2018.pdf)).

STEMworks™ extensive industry network, representing a diverse cross-section of occupations and MEDB’s foundational focus on gender equity in all programs, our critical resources in assessing Hawaii’s technical workforce needs including hiring and skill set demands. By staying on the pulse of industry, STEMworks™ is able to strengthen the education to workforce pipeline, developing curriculum and supporting educators and students with the relevant tools and training applicable to Hawaii’s dynamic and ever-evolving tech sector.

MEDB’s work is consistently informed by research to predict workforce needs. We are versed in the long-term employment projections of the State of Hawaii’s Department of Labor and Industrial Relations, and the U.S. Department of Labor, and regularly conduct our own primary research into workforce demands. We are aware that, in Hawaii, tech employers are mostly small businesses that cannot afford to train and supervise interns without external support. We also understand the need for the development of “work-ready” employability skills including clear written communication, professional demeanor, independent learning, collaboration, decision-making, and the ability to communicate technical details to a nontechnical audience. Through the STEMworks™ program, students interface with industry mentors on service-learning projects gaining work-based exposure throughout the school year. During the summer, students experience six-weeks of full immersion in work-based learning during paid STEMworks™ internships. Through its Code.org regional partnership, STEMworks™ is able to help expand computer science access to high needs schools and underrepresented groups across the state to help ensure Hawaii students have the skills to gain access to high wage jobs in our state.

4. Describe the target population to be served:

7,125 K-12 Hawaii students and 200 K-12 Hawaii teachers in public DOE schools/public charter schools across the state will be served through this proposed project. The program aims for equity in serving underrepresented populations with a STEM pipeline.

5. Describe the geographic coverage:

The proposed funding will serve the islands of Oahu, Kauai, Maui, Molokai, Lanai, and the Island of Hawaii, representing a continued reach on every island in the state (See Attachment D - Geographic Distribution of Existing STEMworks™ Programs Across the State). The proposed funding will provide STEMworks™ and/or computer science program to serve 30+ schools statewide.

III. Service Summary and Outcomes

1. Describe the scope of work, tasks and responsibilities:

The mission of STEMworks™ is to provide students and teachers resources, inspiration, and tools that empower them to improve their community and the world. Through a leveled and layered approach, the proposed project expands opportunities for teachers and students to be

exposed, explore, and become immersed in STEM pathways. The STEMworks™ program will provide an array of the following educational tools, resources and professional development to 200 K-12 Hawaii public school and public charter school teachers (See Attachment C: Timeline Program At A Glance).

Level 1 - Career Exposure

Level 2 - Career Exploration

Level 3 - Career Immersion

Teacher Professional Development:

- **STEMworks™ Professional Development (Levels 1-3/Grades K-12)**

STEMworks™ program begins with professional development for teachers to learn how to facilitate student project-based and culturally aligned STEMworks™ methodology. During training, teachers learn to become facilitators of student-centered service learning projects where students apply technology tools to solve an issue or problem in their communities using the engineering design process as a guide. Additional teacher professional development opportunities may support the various curricula outlined below.

- **Code.org Professional Learning Program (Level 1/Grades K-12)**

Code.org offers the following curricula in computer science literacy which combines digital and hands-on lessons: Computer Science Fundamentals (CSF) (Grades K-5), Computer Science Discoveries (CSD) (Grades 6-10), and Computer Science Principles (CSP) (Grades 9-12). Code.org curricula is aligned to CSTA K-12 CS standards. The Code.org curricula is designed as an introductory course along all grade levels to attract non-traditional students to CS, supporting equity in underrepresented groups, and prepares students to participate in an AP CSP course.

Student STEMworks™ Program:

- **In-class STEMworks™ Program (Levels 1-3/Grades 4-12)**

Students collaborate in teams, using STEMworks™ portfolio of teacher curricular pathway advice and training and resources, to apply technology to real world problem solving. Under the guidance of industry mentors during the school year, students create projects that design solutions to improve their communities. Industry mentorship includes classroom visits, live presentations, and web-based video conferencing.

For **grades K-3**, teachers engage students in STEM hands-on exploratory lessons in an array of STEM fields to pursue STEM electives in middle and high schools.

- **STEMworks AFTERSchool™ (Levels 1-3/Grades K-8)**

STEMworks AFTERSchool™ classes leverage interest and engagement in STEM and is aligned to develop career employability skills. All activities are student centered, creating

an environment where teachers become facilitators to engage and excite students in an array of STEM emerging technologies and pathways.

Curriculum (MEDB's original place-based curriculum and tools):

- **Core Curriculum:**
 - **STEMworks™ Service-Learning Engineering Design Process Toolkit (Levels 2-3/Grades 5-12)** This toolkit is a step by step guide supporting project mentorship, technology tool integration, data collection, data analysis and message delivery to the community. This toolkit is aligned to standards including Next Generation Science Standards, Common Core State Standards in English and Language Arts, Career Technical Education Standards, and aligned to the Nā Hopena A‘o or HĀ framework and ISTE technology standards.
 - **STEMworks THINKit™ Tools and Curriculum (Levels 1-2/Grades K-12)** THINKit™ includes a kit of classroom educational STEM tools designed to encourage creative play and innovation. **THINKit™ Curriculum** and **THINKit™ Action and Inventor Cards** strengthens the continuum of using engineer design in STEM alongside creative learning in K-12. **Prototype:** Design, model and testing of innovations. **Coding:** Read and write in programming languages; **Virtual Reality:** Build immersive stories, interact with the world; **Digital Media:** Tell your story, design messages; **Circuits & Hardware:** Invent with electronic connections; **GIS & Drone:** Explore geospatial tech and drones.

STEM Toolkits:

- **STEMworks™ Community Needs Cards (Level 1/Grades 4-12)** provides examples of strengths and areas of need across Hawaii that impact local industry sectors.
- **STEMworks™ College Toolkit (Level 1/Grades 6-12)** helps guide students towards successful career pathway planning starting in middle school through high school.
- **STEMworks™ Oration Toolkit (Level 1/Grades K-12)** helps students build communication and professional skills while encouraging successful teamwork, collaboration, and industry networking.
- **STEMworks™ Team Roles Toolkit (Level 1/Grade 4-12)** facilitates equity in planning and organization of team roles and responsibilities throughout an engineering design project
- **Community Resource Guide (Level 1/Grades 6-12)** provides students a resource database of community groups and non-profits on each island to connect with to discover potential community service-learning projects.

- **STEMworks™ Tech Tools (Level 1/Grades K-12)** provides students and teachers a list of industry standard technology tools and software programs available to students to develop service-learning projects. STEMworks™ equips STEM labs across the state with state-of-the-art equipment, tools, software as well as access to free K-12 software through partnerships with Trimble (SketchUp Pro Software) and Esri (ArcGIS Software).

STEMworks™ Modules:

- **Drone CAD Unmanned Aerial Vehicle (UAV) Curriculum (Levels 2-3/Grades 9-12)** - The first original drone computer-aided design UAV Curriculum in the State of Hawaii and among the first in the nation to be aligned with New Generation Science Standards (NGSS) and ISTE standards. The curriculum guides the student through a hands-on design process, exploring the interaction between hardware, software and circuitry. Students use computer-aided design software and 3D print components of their designs.
- **Geographic Information System (GIS) Curriculum (Levels 1-3/Grades 9-12)** - Promotes place-based, experiential learning using GIS mapping and data analysis Global Positioning System (GPS) tools. This STEMworks™ module includes place-based activities exploring the Hokule'a, topographic mapping, False Killer Whales, and geospatial careers.
- **STEMworks Energy™ (formerly known as Island Energy Inquiry™) (Levels 1-3/Grades K-12)** – MEDB's original, place-based clean energy curriculum designed for Hawaii teachers that with scientific content, methodology, and engineering design processes that are aligned with elementary NGSS and Common Core Standards. Includes hands-on K-12 student labs that grow core math and science principles with skills to understand and solve the state's energy issues. Companion apps include: the STEMworks Energy™ virtual reality app and website as an industry focused tool and the Clean Energy Hawaii STEM scientific inquiry iPad app.
- **STEMworks™ Exploring Hawaii's Watersheds Through STEM Curriculum (Levels 1-2/Grades 4-12)** - Developed to educate students on Hawaii's watersheds. The place-based curriculum module includes five areas that introduce students to geographic information systems (GIS): Native Species, Invasive Species, Native Forest Management Strategies, Watershed Partnerships, and Field Day Story Mapping. Students use Esri's ArcGIS Online to explore layers, analyze data, and create Esri Story Maps informing their local communities about the importance of protecting our island's unique ecosystems.

Industry Standard Technology

- **STEMworks™ Lending Library (Levels 1-3/Grades K-12)**

A STEM lending library of software and hardware technology tools are available to loan, which augments site-based classrooms across the state with supplies that include, but is not limited to: coding, circuitry, prototyping, CAD, 3D printing, virtual reality, geospatial and drone technologies, and digital media.

- **STEMworks™ Software Training/STEM Workshops (Levels 1-3/Grades K-12)**

STEMworks™ facilitates training camps for students to explore STEM areas and use industry tools/software. Industry professionals skilled at engaging students provide expert guidance in technology instruction. Select student participants in trainings return to the classroom to lead student peer-to-peer training to share knowledge and skills.

- **STEMworks™ Lab Retrofit (Levels 1-3/Grades K-12)**

When feasible with funding, STEMworks™ labs are retrofitted with supplies including THINKit™ kits and industry standard tools including hardware and software to support student project integration throughout the year.

Live Webinars and Subscriptions

- **STEMworks™ LIVE and Nepris (Levels 1-3/Grades 6-12)**

STEMworks™ facilitates student field trips connecting students with industry professionals supporting STEM career presentations, student/professional networking opportunities, and hands-on activities to expose students to STEM careers, excite their interest, and allow them time to explore local STEM career opportunities that interests them. With the Nepris STEMworks™ subscriptions support customized live industry to classroom sessions and on-demand access to over 6,600 and growing recorded video sessions, helping teachers connect curriculum with real world occupations and careers virtually into classrooms.

- **STEM Jobs Subscription (Level 1/Grades 4-12)**

Annual subscription to STEM Jobs providing age appropriate insight, articles, and posters about STEM professionals in current STEM careers, aligned to college degree programs and hiring companies.

Regional Technology Conference

Hawaii STEM Conference (Levels 1-2/Grades 6-12)

Students and educators will participate in an annual regional technology conference where over 1,200 students, educators, industry professionals, and community leaders from across the state and nation convene on Oahu. Students will engage in two days of hands-on activities using cutting-edge STEM technologies designed to excite students to the potential of STEM as well as to the opportunities of rewarding STEM careers.

Besides participating in pre-conference and on-site STEM competitions, students will

interact with local and national industry professionals during STEMworks™ 5x5 (5 minutes & 5 networking rounds) to explore STEM educational and career pathways, to learn how to use technology tools to better their communities, and to improve employability skills such as communication, leadership and entrepreneurship. Students will inspire one another as they explore their peers' STEM service-learning projects designed to create positive change in their communities. K-12 educators will have the opportunity to reignite their love of teaching as they participate in two days of professional development and discover new and exciting ways to engage students in the engineering design process and the latest STEM technologies.

Work-Based Learning Internships:

STEMworks™ Summer Internships (Level 3/Grades 10-12)

During the STEMworks™ Internship program, high school students are placed with host companies across the islands to become workforce ready during six weeks of career immersion. Interns work with mentors to create a company project or deliverable while experiencing a professional environment. Students partake in 30+ hours of professional development to improve employability and work readiness skills. STEMworks™ has placed over 300 students across the Hawaii islands in professional STEM internships. For over a decade, interns have worked alongside professionals in fields that include astronomy, agriculture, computer science, energy, healthcare, advertising and marketing, environmental science, architecture and engineering.

2. Provide a projected annual timeline for accomplishing the results or outcomes of the service:

See Attachment C: Timeline Program At A Glance

3. Describe its quality assurance and evaluation plans for the request. Specify how the applicant plans to monitor, evaluate, and improve their results.

STEMworks™ evaluates its educational impact on its participants through front end and summative survey instruments; the surveys will be delivered via pre-and post-assessments, including mid-year assessments to track progress. The information collected will be a mix of qualitative and quantitative data. By using specialized program software, survey results will be compiled and compared to determine program impact. Assessments are designed to measure educators' demographic information; assess baseline knowledge of STEM technology awareness, STEM career awareness, implementation of teaching methodologies to support collaborative teams, service learning, the engineering design process and inquiry learning, attitudes towards supporting gender and cultural equity. STEMworks™ workshop post-assessments focus on how participants' capacities improve in teaching methodology to support

collaborative teams, knowledge of the engineering design process, and understanding gender equity and cultural alignment in classroom education, especially in STEM fields. Schools and key stakeholders are provided with customized dashboards to monitor program successes. STEMworks™ performs mid-year assessments for STEMworks™ advisors and schools to determine additional support needed, if any, to ensure program success.

4. List the measure(s) of effectiveness that will be reported to the State agency through which grant funds are appropriated (the expending agency).

For the proposed 100 teachers who are trained in implementing the STEMworks™ Program, a data management tool is used to track longitudinal impact through key program outcomes and measures via pre-and post-surveys throughout the multipronged STEMworks™ approach, including data from professional development workshops, trainings, and programmatic activities throughout the year. Longitudinal data collection includes garnering feedback for improvement opportunities in the program. Compiled data includes visualization of a dashboard sharing programmatic outcomes.

Objective 1: STEMworks™ trained teachers engage students in the engineering design process in their classrooms to support students in developing career ready employability skills as they build collaborative team responsibilities in their classrooms.

STEMworks™ will monitor and report the number of teachers in STEMworks™ cohort:

Outcome #1.1: Engaging students in the engineering design process in their classrooms.
Measure #1.1: 80% of trained in STEMworks™ cohort teachers will implement the engineering design process in their classrooms.

Outcome #1.2: Supporting students in developing career ready employability skills and building collaborative team responsibilities in their classrooms.
Measure #1.2: 80% of trained in STEMworks™ cohort teachers will employ STEMworks™ strategies to support students in developing career ready employability skills and building collaborative team responsibility in their classrooms.

Objective 2: STEMworks™ trained teachers employ industry aligned STEMworks™ practices and tools with students including: a class environment of equity, which supports gender equity and cultural diversity in STEM roles and projects; application of industry aligned technology; and industry connections and/or experiences.

STEMworks™ will monitor and report the number of teachers in STEMworks™ cohort:

Outcome #2.1: Purposefully employ strategies to support a class environment of equity, including gender equity in STEM roles and projects.

Measure #2.1: 90% of trained in STEMworks™ cohort teachers will support a class environment of equity, including gender equity in STEM roles and projects.

Outcome #2.2: Utilize industry aligned technology, and industry connections and/or experiences with students during the year to support STEM career exploration and project growth.

Measure #2.2: 80% of trained in STEMworks™ cohort teachers will utilize industry aligned technology, and industry connections and/or experiences with their program students.

Objective 3: Through the STEMworks™ Regional Partnership with Code.org, trained teachers will increase equitable access for students of high need as well as the capacity of computer science literacy for students across Hawaii.

STEMworks™ will monitor and report the number of teachers in Code.org cohort:

Outcome #3.1: Employ curricula to increase the capacity of computer science literacy for students.

Measure #3.1: 80% of Code.org cohort trained teachers will implement computer science lessons with students.

Outcome #3.2: Offer equitable access for students of high need with computer science education across Hawaii.

Measure #3.2: 60% of Code.org cohort trained teachers will be in schools of high need across the state of Hawaii.

IV. Financial

Typical costs for a DOE student per year are over \$8,000, whereas, **using leveraged funding for STEMworks™, the cost is \$85 per student for this grant, reaching 7,125 students and 200 STEMworks™ and Code.org cohort teachers.** Teachers report that STEMworks™ students are motivated and self-directed, and teachers themselves regain enthusiasm for their profession. Additionally, students gain project-based career ready employability skills and confidence in their ability to create a real contribution to solving challenges facing their local communities. This leads to self-empowerment and civic engagement in taking an active role in becoming a leader in their local community in Hawaii.

Budget

1. The applicant shall submit a budget utilizing the enclosed budget forms as applicable, to detail the cost of the request.

- See Attachment E.a: Budget request by source of funds
- See Attachment E.b: Personnel salaries and wages
- See Attachment E.c: Equipment and motor vehicles
- See Attachment E.d: Capital project details
- See Attachment E.e: Government contracts, grants, and grants in aid

2. The applicant shall provide its anticipated quarterly funding requests for the fiscal year 2020.

Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total Grant
\$184,00	\$152,000	\$132,000	\$130,000	\$598,000

3. The applicant shall provide a listing of all other sources of funding that they are seeking for fiscal year 2020.

* These monies are used for related and targeted economic development services provided by Maui Economic Development Board, Inc.

Federal	\$750,000
AFRL (sub-NM Tech) (<i>STEMworks™ Program</i>)	\$100,000
ONR (<i>STEMworks™ Program</i>)	\$650,000

State	\$75,000
HTA - MFF19*	\$75,000

County	\$1,035,000
County of Maui - OED20 (<i>STEMworks™ Program</i>)	\$205,000
County of Maui - OED20 *	\$610,000
County of Maui - Health Sector (<i>STEMworks™ Program</i>)	\$50,000

County of Maui - Conf Scvs20*	\$75,000
County of Maui - MHS20*	\$45,000
County of Maui - MFF20*	\$25,000
County of Maui - KIK20*	\$25,000

Private	\$1,624,000
Maui County Farm Bureau (<i>STEMworks™ Program</i>)	\$12,000
Code.org (<i>STEMworks™ Program</i>)	\$16,000
HI STEM Conference (<i>STEMworks™ Program</i>)	\$180,000
Kamehameha Foundation (<i>STEMworks™ Program</i>)	\$100,000
Ke Alahele (<i>STEMworks™ Program</i>)	\$50,000
Ke Alahele*	\$266,000
AMOS Conference*	\$700,000
Hawaii Energy Conference*	\$185,000
Memberships*	\$115,000

4. The applicant shall provide a listing of all state and federal tax credits it has been granted within the prior three years. Additionally, the applicant shall provide a listing of all state and federal tax credits they have applied for or anticipate applying for pertaining to any capital project, if applicable.

N/A

5. The applicant shall provide a listing of all federal, state, and county government contracts, grants, and grants in aid it has been granted within the prior three years and will be receiving for fiscal year 2020 for program funding.

See Attachment E.e - Government contract, grants, and grants in aid

6. The applicant shall provide the balance of its unrestricted current assets as of December 31, 2018.

Balance of unrestricted assets at 12/31/18: \$2,824,885

V. Experience and Capability

1. Necessary Skills and Experience

STEMworks™ is a workforce development program under the umbrella of Maui Economic Development Board, has been building education programs in STEM for K-12 schools statewide for over 19 years. In particular, STEMworks™ programs are designed to reach equity of underrepresented populations in STEM fields, including girls, women, and indigenous populations. Recognizing the need for developing a career STEM pipeline, STEMworks™ curriculum and training focuses in critical thinking through engineering design practices that are applied to a multitude of high demand/high growth STEM areas for our state, including cybersecurity, health, digital media, geospatial technology, computer-aided design and 3D printing, virtual reality, coding and programming, energy, environmental sciences and agriculture. MEDB retains independent A-133 audits annually and due to its years of unconditional opinions, clean audits, with no material weaknesses, MEDB is classified as a low risk auditee.

Verifiable list of experience of related projects of contracts from most recent three years:

- STEMworks™ in-school programming served 28 schools three years ago, growing to 30 schools statewide in Fall of 2018; the in-school program serves 4,000+ student annually.
- The statewide Hawaii STEM Conference has grown from serving 600+ students and teachers three years ago to serving 1000+ students and teachers, statewide, in 2018.
- STEMworks AFTERSchool™, funded by a 21st Century Community Learning Center Grant, has served over 800 students and over 500 families in five Maui County schools since the Fall of 2015, and currently serves over 375 students and 200 families this school year through the Spring of 2019.
- STEMworks AFTERSchool™, funded by Kamehameha Educational Fund, is serving over 100 students and families in one Maui County school from the Fall of 2018 through the Spring of 2020.
- STEMworks™ Summer Internships have served over 120 student high school interns
- STEMworks™ is the Code.org Regional Partner for Hawaii and participates in administrative nationwide training to support local computer science education expansion in Hawaii. STEMworks™ has trained over 100 K-12 teachers and is actively recruiting

elementary, middle, and high school teachers to participate in CS Fundamentals workshops and the Code.org Professional Learning Program supporting CS Discoveries and CS Principles curricula training.

- STEMworks Energy™, formerly Island Energy Inquiry™, MEDB's original, place-based clean energy curriculum, trained 121 K-12 teachers representing 10,157 students across Hawaii under a State of Hawaii Grant in Aid awarded in 2015. With leveraged funding, STEMworks Energy™ has trained a total of 649 teachers across the state, representing over 75,000 students, helping increase both students and teachers understanding of energy sources and uses in Hawaii.

2. Facilities

MEDB operates and manages its own training facility, with state-of-the art technology and distance learning equipment, meeting all ADA compliance. Much of the training will be on-site at the participating schools.

VI. Personnel: Project Organization and Staffing

1. Proposed Staffing, Staff Qualifications, Supervision and Training

MEDB is a non-profit, 501(c)3 organization has 37 years of experience in program development and implementation to diversify Hawaii's economy and build the requisite resident trained workforce. It is led by a 33-member Board of Directors from the state's most recognized leaders in industry, government, academia, and community organizations. Its skilled 21-member staff manages a complex project portfolio in economic and workforce development, with a funding base from federal, state, county, and private industry and community investments. Of these 21 staff, five staff are dedicated to running educational STEM programs across the state; MEDB will utilize these existing trained and dedicated STEMworks™ program staff which have a proven track record for successful all aspects of the proposed project, STEMworks™, through educational program implementation, including teacher professional development, industry software workshops and webinar, internship management, and ongoing data collection, analysis for programmatic improvement and reporting. These salaries are partially leveraged by other funding sources to implement the proposed program.

Senior Management for the program (support proposed project at no charge to state GIA budget)

Leslie Wilkins - Maui Economic Development Board, Inc., President & CEO

Professional Experience:

In October 1999, Ms. Wilkins was hired to create, launch, and lead implementation of the Women in Technology Project (WIT), a pilot and demonstration program, designed to engage more girls, women and minorities into the Science, Technology, Engineering and Math (STEM) pipeline. Today, the program is recognized as a "national best practices model" and annually serves 40,000 participants across the state. In her 17-year role as

MEDB's Vice President, she oversaw a \$22 million funding portfolio, including principal investigator of grants from eight federal agencies. In July 2017, she was elected as president by the MEDB Board of Directors.

Collaborations & Affiliations: Ms. Wilkins is an experienced advocate for women and workplace equity issues. She is currently serving her second term appointment as chair of the Hawaii State Commission on the Status of Women. She previously served as the Commission chair from 1996 - 2003. She further serves as chair of the Hawaii Workforce Development Council and the Maui County Workforce Board. She has held state and national leadership roles with the Business & Professional Women's Organization (BPW/USA) for more than two decades. After completing her term as BPW/Hawaii State President in 1992, she was recruited for national service as Legislation/Issues Management chair and in 1994 she was elected to BPW/USA's Executive Committee culminating in her election as BPW/USA's National President and BPW Foundation Chair through 2002. She continues as a national trustee of the BPW Foundation. **Honors** include the 2014 Hawaii SBA Veteran Business Advocate Award; the 2001 Federal Region IX SBA Women's Business Advocate; the 2005 International Economic Development Council (IEDC) Performance Award for a Multi-Year Local Economic Development Initiative.

Management team for the proposed project, the STEMworks™ program, includes:

1. **Isla Young** is the Director of STEM Education and Workforce Development programs for MEDB's STEMworks™ Program. Isla provides the leadership to develop statewide project and place based, interdisciplinary learning programs reaching over 40,000 students and teachers in K-12 STEM education. Isla builds partnerships and collaborates with local and national leaders in technology and industry, institutions of higher education, and STEM-centered professional organizations. In addition, she serves on the Board of the Hawaii Geographic Information Coordinating Council (HIGICC), Board member of Pacific Center for Advanced Technical Training (PCATT), Board member of the Hawaii Science Teachers Association (HaSTA), CyberHawaii Education and Workforce Development Committee, and serves on the Board of the Patsy T. Mink Center for Business & Leadership (MCBL).
2. **Melinda White** has eight years of experience as a certified Math/Science/Special Education Teacher and is an ambassador for Michigan State University's College of Education. She earned a Masters in Teaching and Curriculum and holds a BS in Zoology. She is a curriculum writer, professional development trainer, and is a program manager for STEMworks AFTERSchool™ programs at five school sites in Maui County.
3. **Mapu Quitazol** has been a Program Manager for the Women in Technology Project since 2009, providing leadership and coordination for place-based, interdisciplinary learning programs that serves students and teachers in K-12 STEM education statewide.

She currently serves as a board member for the Hawaii Society for Technology in Education (HSTE).

4. **Denissa Andrade** has seven years' experience coordinating STEMworks Energy™ workshops, managing the summer STEMworks™ Internship program, managing the 2015 NOAA B-WET Healthy Watersheds → Healthy Communities Project, and co-managing the STEMworks™ Code.org partnership working with students, teachers and industry partners to facilitate events.
5. **Lalaine Pasion** is a Project Manager for STEMworks™ creating STEM opportunities for high school and college work-based learning statewide. She earned her degree in Business Technology and serves as an Advisory Committee for University of Hawaii Maui College for nine years.

2. **Organization Chart**

See Attachment F: MEDB Organizational Chart

3. **Compensation**

The applicant shall provide an annual salary range paid by the applicant to the three highest paid officers, directors, or employees of the organization by position title, not employee name.

President & CEO: \$138,000

Project Director, STEM: \$90,000

Project Director, Business Development: \$85,000

VII. **Other**

1. **Litigation**

N/A

2. **Licensure or Accreditation**

Lead STEMworks™ instructor is a licensed teacher in the State of Hawaii and holds a Master's Degree in Teaching and Curriculum.

3. **Private Educational Institutions**

No, funding from the grant will not be used to support or benefit any teachers, students or schools from non-sectarian private educational institutions. It will be used exclusively to support public institution teachers and build capacity for Hawaii's enrolled public education students.

4. Future Sustainability Plan

The STEMworks™ proposed program is highly leveraged and not solely dependent on the requested state funding. This GIA request will help serve current teacher demand for depth of the program with professional development, curricula resources, including retrofitting STEMworks™ labs with cutting edge technology tools and building local capacity for computer science literacy for sustainability in future years. Teachers trained within the DOE will continue to serve students beyond the students counted in this one-year implementation. Teacher capacity in engineering design practices and team collaborative project-based service learning activity management will remain within the DOE, as will the relationships developed with industry mentors. Each classroom will have access to a shared investment in lending libraries of STEM technology tools, and investment which will equip classrooms for future years.

ATTACHMENT A



Department of Commerce and Consumer Affairs

CERTIFICATE OF GOOD STANDING

I, the undersigned Director of Commerce and Consumer Affairs of the State of Hawaii, do hereby certify that

MAUI ECONOMIC DEVELOPMENT BOARD, INC.

was incorporated under the laws of Hawaii on 04/26/1982 ; that it is an existing nonprofit corporation; and that, as far as the records of this Department reveal, has complied with all of the provisions of the Hawaii Nonprofit Corporations Act, regulating domestic nonprofit corporations.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Department of Commerce and Consumer Affairs, at Honolulu, Hawaii.

Dated: January 14, 2019

Director of Commerce and Consumer Affairs



ATTACHMENT B

DECLARATION STATEMENT OF
APPLICANTS FOR GRANTS PURSUANT TO
CHAPTER 42F, HAWAII REVISSED STATUTES

The undersigned authorized representative of the applicant certifies the following:

- 1) The applicant meets and will comply with all of the following standards for the award of grants pursuant to Section 42F-103, Hawaii Revised Statutes:
 - a) Is licensed or accredited, in accordance with federal, state, or county statutes, rules, or ordinances, to conduct the activities or provide the services for which a grant is awarded;
 - b) Complies with all applicable federal and state laws prohibiting discrimination against any person on the basis of race, color, national origin, religion, creed, sex, age, sexual orientation, or disability;
 - c) Agrees not to use state funds for entertainment or lobbying activities; and
 - d) Allows the state agency to which funds for the grant were appropriated for expenditure, legislative committees and their staff, and the auditor full access to their records, reports, files, and other related documents and information for purposes of monitoring, measuring the effectiveness, and ensuring the proper expenditure of the grant.
- 2) If the applicant is an organization, the applicant meets the following requirements pursuant to Section 42F-103, Hawaii Revised Statutes:
 - a) Is incorporated under the laws of the State; and
 - b) Has bylaws or policies that describe the manner in which the activities or services for which a grant is awarded shall be conducted or provided.
- 3) If the applicant is a non-profit organization, it meets the following requirements pursuant to Section 42F-103, Hawaii Revised Statutes:
 - a) Is determined and designated to be a non-profit organization by the Internal Revenue Service; and
 - b) Has a governing board whose members have no material conflict of interest and serve without compensation.

Pursuant to Section 42F-103, Hawaii Revised Statutes, for grants used for the acquisition of land, when the organization discontinues the activities or services on the land acquired for which the grant was awarded and disposes of the land in fee simple or by lease, the organization shall negotiate with the expending agency for a lump sum or installment repayment to the State of the amount of the grant used for the acquisition of the land.

Further, the undersigned authorized representative certifies that this statement is true and correct to the best of the applicant's knowledge.

Maui Economic Development Board, Inc.

(Typed Name of Individual or Organization)


(Signature)

11/7/19
(Date)


Leslie Wilkins

(Typed Name)

President & CEO

(Title)

ATTACHMENT C: TIMELINE PROGRAM AT A GLANCE

 CAREER EXPOSURE EXPLORATION		CAREER IMMERSION				2019		2020	
						Jul-Sept	Oct-Dec	Jan-Mar	Apr-Jun
		LEVEL 2:	LEVEL 3:	Q 1	Q 2	Q 3	Q 4		
TEACHER PROGRAM	STEMworks™ Professional Development - STEMworks™ program begins with professional development for teachers to learn how to facilitate student project-based and culturally aligned STEMworks™ methodology. During training, teachers learn to become facilitators of student-centered service learning projects where students apply technology tools to solve an issue or problem in their communities using the engineering design process as a guide. Additional teacher professional development opportunities may support the various curricula STEM focus areas. (Levels 1-3/Grades K-12)	X			X				
	Code.org Computer Science Professional Development Program - Code.org offers the following curricula in computer science literacy which combines digital and hands-on lessons: Computer Science Fundamentals (Grades K-5), Computer Science Discoveries (Grades 6-10), and Computer Science Principles (Grades 9-12). (Level 1/Grades K-12)	X	X	X	X				
STUDENT PROGRAM	In-class STEMworks™ Program - Students collaborate in teams, using STEMworks™ portfolio of teacher curricular pathway advice, training and resources, to apply technology to real world problem solving. Under the guidance of industry mentors during the school year, students create projects that design solutions to improve their communities. Industry mentorship includes classroom visits, live presentations, and web-based video conferencing. (Levels 1-3/Grades 4-12). For grades K-3, teachers engage students in STEM hands-on exploratory lessons in an array of STEM fields to pursue STEM electives in middle and high schools. (Level 1/Grades K-3)	X	X	X	X				
	STEMworks AFTERSCHOOL™ classes leverage interest and engagement in STEM and is aligned to develop career employability skills. All activities are student centered, creating an environment where teachers become facilitators to engage and excite students in an array of STEM emerging technologies and pathways. (Levels 1-3/Grades K-8)	X	X	X	X				
CURRICULUM, MODULES & STEM TOOLKITS	Core Curriculum: STEMworks™ Service-Learning Engineering Design Process Toolkit to guide student projects throughout the engineering design process in serving learning projects utilizing high end technology tools to solve community needs. (Levels 2-3/Grades 5-12)	X	X	X	X				
	Core Curriculum: STEMworks THINKIT™ Tools & Curriculum includes a kit of classroom educational STEM tools designed to encourage creative play, innovation & application of the engineering design process in array of STEM fields. THINKIT™ Curriculum and THINKIT™ Action and Inventor Cards strengthens the continuum of using engineer design in STEM alongside creative learning in K-12. Prototype: Design, model and testing of innovations. Coding: Read and write in programming languages; Virtual Reality: Build immersive stories, interact with the world; Digital Media: Tell your story, design messages; Circuits & Hardware: Invent with electronic connections; GIS & Drone: Explore geospatial tech and drones. (Levels 1-2/Grades K-12)	X	X	X	X				
	Toolkit: STEMworks™ Community Needs Cards provides examples of strengths and areas of need across Hawaii that impact local industry sectors. (Level 1/Grades 4-12)	X	X	X	X				
	Toolkit: STEMworks™ College Toolkit helps guide students towards successful career pathway planning starting in middle school through high school. (Level 1/Grades 6-12)	X	X	X	X				
	Toolkit: STEMworks™ Oration Toolkit helps students build communication and professional skills while encouraging successful teamwork, collaboration, and industry networking. (Level 1/Grades K-12)	X	X	X	X				
	Toolkit: STEMworks™ Team Roles Toolkit facilitates equity in planning and organization of team roles and responsibilities throughout an engineering design project. (Level 1/Grades 4-12)	X	X	X	X				
	Toolkit: STEMworks™ Community Resources Guide provides students a resource database of community groups and non-profits on each island to connect with to discover potential community service-learning projects. (Level 1/Grades 6-12)	X	X	X	X				
	Toolkit: STEMworks™ Tech Tools provides students and teachers a list of industry standard technology tools and software programs available to students to develop service-learning projects. (Level 1/Grades K-12)	X	X	X	X				
	STEMworks™ Curricula Modules: Drone CAD Unmanned Aerial Vehicle (UAV) Curriculum (Levels 2-3/Grades 9-12), Geographic Information System (GIS) Curriculum (Levels 1-3/Grades 9-12), STEMworks Energy™ (Levels 1-3/Grades K-12), and STEMworks™ Exploring Hawaii's Watersheds Through STEM (Levels 1-2/Grades 4-12)	X	X	X	X				
INDUSTRY STANDARD TECHNOLOGY	STEMworks™ Lending Library includes STEM software and hardware technology tools available for loan, augmenting site-based classrooms across the state with supplies that include, but is not limited to: coding, circuitry, prototyping, CAD, 3D printing, virtual reality, geospatial and drone technologies, and digital media. (Levels 1-3/Grades K-12)	X	X	X	X				
	STEMworks™ Software Training/STEM Workshops allows students to explore STEM areas and use industry tools/software. Industry professionals skilled at engaging students provide expert guidance in technology instruction. Select students participants in trainings return to the classroom to lead student peer-to-peer training to share knowledge and skills. (Levels 1-3/Grades K-12)	X	X	X	X				
	STEMworks™ Labs Retrofit includes classrooms equipped with THINKIT™ kits and industry standard tools, including hardware and software supporting student project integration throughout the year. (Levels 1-3/Grades K-12)	X	X	X	X				
LIVE WEBINARS & SUBSCRIPTIONS	STEMworks™ LIVE and Nepris includes student field trips connecting students with industry professionals supporting STEM career presentations, student/professional networking opportunities, and hands-on activities to allow students time to explore local STEM career opportunities that interests them; Nepris STEMworks™ subscriptions supporting customized live industry to classroom sessions and on-demand access to over 6,600 and growing recorded video sessions, helping teachers connect curriculum with real world occupations and careers virtually into classrooms; and statewide STEMworks™ LIVE monthly industry sessions in high demand/high growth career areas. (Levels 1-3/Grades 6-12)	X	X	X	X				
	STEMJobs Subscription Annual subscription to STEMJobs providing age appropriate insight, articles, and posters about STEM professionals in current STEM careers, aligned to college degree programs and hiring companies. (Level 1/Grades 4-12)	X	X	X	X				
REGIONAL TECHNOLOGY CONFERENCE	Hawaii STEM Conference - Annual regional technology conference where over 1,200 students, educators, industry professionals, and community leaders from across the state and nation convene on Oahu. Students engage in two days of hands-on activities using cutting-edge STEM technologies, participate in pre-conference and on-site STEM competitions, interact with local and national industry professionals during STEMworks™ 5x5 to explore STEM educational and career pathways, learn how to use technology tools to better their communities, improve employability skills, and inspire one another as they explore their peers STEM service-learning projects that create positive change in their communities. K-12 educators participate in two days of professional development to discover new and exciting ways to engage students in the engineering design process and the latest STEM technologies. (Levels 1-2/Grades 6-12)				X				
WORK-BASED LEARNING INTERNSHIPS	STEMworks™ Summer Internships - High school students are placed with host companies across the islands to become workforce ready during six weeks of career immersion. Interns create a company project or deliverable while experiencing a professional environment working alongside professional mentors in fields that include astronomy, agriculture, computer science, energy, healthcare, advertising and marketing, environmental science, architecture and engineering. Students partake in 30+ hours of professional development to improve employability and work readiness skills. (Level 3/Grades 10-12)				X				

Attachment D: Geographic Distribution of Existing STEMworks™ Programs Across the State

30 STEMworks™ K-12 SCHOOLS

MAUI

Baldwin High School
Kalama Intermediate School
Kamalii Elementary School
King Kekaulike High School
Lahainaluna High School
Lahaina Intermediate School
Lokelani Intermediate School
Maui High School
Maui Waena Intermediate School
Pukalani Elementary School
St. Anthony School
Wailuku Elementary School

MOLOKAI

Molokai Middle - O Hina I Ka Malama
Molokai Middle School
Molokai High - O Hina I Ka Malama
Molokai High School

LANAI

Lanai High & Elementary School

OAHU

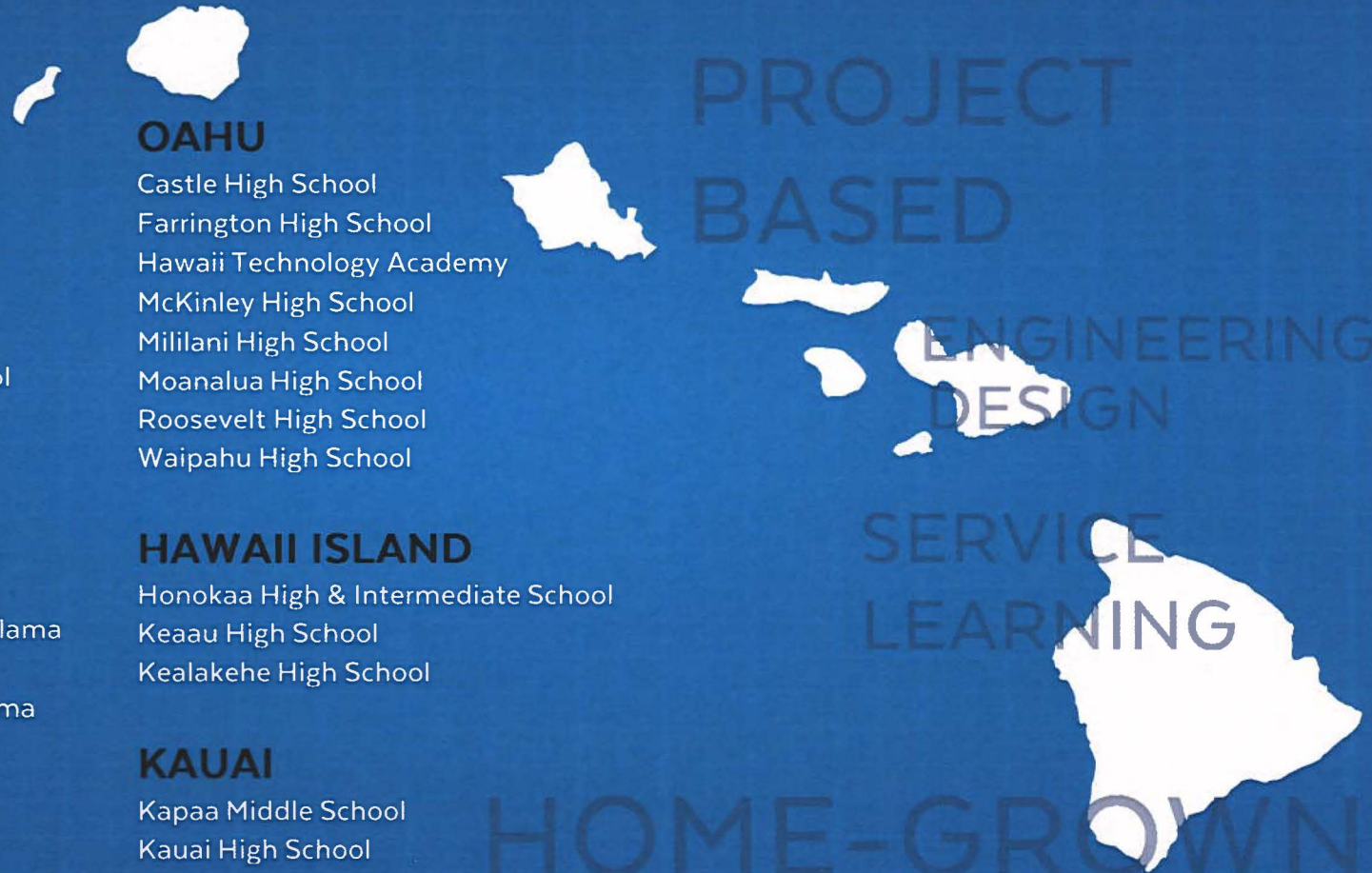
Castle High School
Farrington High School
Hawaii Technology Academy
McKinley High School
Mililani High School
Moanalua High School
Roosevelt High School
Waipahu High School

HAWAII ISLAND

Honokaa High & Intermediate School
Keaau High School
Kealakehe High School

KAUAI

Kapaa Middle School
Kauai High School




ATTACHMENT E.a.

BUDGET REQUEST BY SOURCE OF FUNDS

Period: July 1, 2019 to June 30, 2020

Applicant: Maui Economic Development Board, Inc.

BUDGET CATEGORIES	Total State Funds Requested (a)	Total Federal Funds Requested (b)	Total County Funds Requested (c)	Total Private/Other Funds Requested (d)
A. PERSONNEL COST				
1. Salaries	62,300	285,843	67,531	11,799
2. Payroll Taxes & Assessments	6,325	29,020	6,856	1,198
3. Fringe Benefits	19,199	88,090	20,811	3,636
TOTAL PERSONNEL COST	87,824	402,953	95,199	16,633
B. OTHER CURRENT EXPENSES				
1. Airfare, Inter-Island	12,000	23,140	3,001	46,575
2. Insurance	0			
3. Lease/Rental of Equipment	0			
4. Lease/Rental of Space	0			
5. Staff Training	0			
6. Supplies	7,376			
7. Telecommunication	0			
8. Utilities	0			
9. Student STEM + Work-based Learning	133,000	76,284	120,630	282,000
10. Teacher Training	63,000	114,426	27,070	32,742
11. Classroom Supplies	136,000	42,717		
12. Web Site	18,000			
13. Web Conference	800			
14. Consultants	20,000	90,480	9,100	54,050
15. Database Management Tool	20,000			
16. Computer Science Training	100,000			16,000
17				
18				
19				
20				
TOTAL OTHER CURRENT EXPENSES	510,176	347,047	159,801	431,367
C. EQUIPMENT PURCHASES	0	0	0	0
D. MOTOR VEHICLE PURCHASES	0	0	0	0
E. CAPITAL	0	0	0	0
TOTAL (A+B+C+D+E)	598,000	750,000	255,000	448,000
SOURCES OF FUNDING		Budget Prepared By:		
(a) Total State Funds Requested	598,000	Michelle Cocca	808-875-2388	
(b) Total Federal Funds Requested	750,000	Name (Please type or print)	Phone	
(c) Total County Funds Requested	255,000		1/17/19	
(d) Total Private/Other Funds Requested	448,000	Signature of Authorized Official	Date	
TOTAL BUDGET	2,051,000	Leslie Wilkins, President and CEO		
		Name and Title (Please type or print)		

ATTACHMENT E.b.
BUDGET JUSTIFICATION - PERSONNEL SALARIES AND WAGES

Period: July 1, 2019 to June 30, 2020

Applicant: Maui Economic Development Board, Inc.

POSITION TITLE	FULL TIME EQUIVALENT	ANNUAL SALARY A	% OF TIME ALLOCATED TO GRANT REQUEST B	TOTAL STATE FUNDS REQUESTED (A x B)
Program Director	1	\$90,000.00	16.00%	\$ 14,400.00
Program Manager	1	\$76,000.00	25.00%	\$ 19,000.00
Program Assistant	1	\$50,000.00	20.00%	\$ 10,000.00
Program Assistant	1	\$50,000.00	20.00%	\$ 10,000.00
Program Assistant	1	\$44,500.00	20.00%	\$ 8,900.00
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
TOTAL:				62,300.00
JUSTIFICATION/COMMENTS:				

ATTACHMENT E.c.
BUDGET JUSTIFICATION - EQUIPMENT AND MOTOR VEHICLES

Period: July 1, 2019 to June 30, 2020

Applicant: Maui Economic Development Board, Inc

DESCRIPTION EQUIPMENT	NO. OF ITEMS	COST PER ITEM	TOTAL COST	TOTAL BUDGETED
None			\$ -	
			\$ -	
			\$ -	
			\$ -	
			\$ -	
TOTAL:				

JUSTIFICATION/COMMENTS:

DESCRIPTION OF MOTOR VEHICLE	NO. OF VEHICLES	COST PER VEHICLE	TOTAL COST	TOTAL BUDGETED
None			\$ -	
			\$ -	
			\$ -	
			\$ -	
			\$ -	
TOTAL:				

JUSTIFICATION/COMMENTS:

ATTACHMENT E.d.
BUDGET JUSTIFICATION - CAPITAL PROJECT DETAILS

Period: July 1, 2019 to June 30, 2020

Applicant: Maui Economic Development Board

FUNDING AMOUNT REQUESTED						
TOTAL PROJECT COST	ALL SOURCES OF FUNDS RECEIVED IN PRIOR YEARS		STATE FUNDS REQUESTED	OTHER SOURCES OF FUNDS REQUESTED	FUNDING REQUIRED IN SUCCEEDING YEARS	
	FY: 2017-2018	FY: 2018-2019	FY:2019-2020	FY:2019-2020	FY:2020-2021	FY:2021-2022
PLANS						
LAND ACQUISITION						
DESIGN						
CONSTRUCTION						
EQUIPMENT						
TOTAL:						
JUSTIFICATION/COMMENTS: There are no capital expenditure associated with this program.						

**ATTACHMENT E.e.
GOVERNMENT CONTRACTS, GRANTS, AND / OR GRANTS IN AID**

Applicant: Maui Economic Development Board, Inc.

Contracts Total:

7,585,141

	CONTRACT DESCRIPTION	EFFECTIVE DATES	AGENCY	GOVERNMENT ENTITY (U.S. / State / Haw / Hon / Kau / Mau)	CONTRACT VALUE
1	2015 CEDS Report	5/8/15-12/31/16	(sub) EDAH	U.S.	38,637
2	STEMworks AFTERSchool, FY16 supplement	7/1/15-12/31/16	(sub) HIDOE	U.S.	326,000
3	STEMworks AFTERSchool, FY17	7/1/16-6/30/17	(sub) HIDOE	U.S.	200,000
4	STEMworks AFTERSchool, FY18	7/1/16-6/30/18	(sub) HIDOE	U.S.	200,000
5	STEMworks AFTERSchool, FY18 supplement	9/25/17-9/30/17	(sub) HIDOE	U.S.	56,477
6	STEMworks AFTERSchool, FY19	7/1/18-6/30/19	(sub) HIDOE	U.S.	358,627
7	AFRL STEM Initiatives	7/1/16-6/30/17	(sub) New Mexico Tec	U.S.	130,000
8	AFRL STEM Initiatives	7/1/17-6/30/19	(sub) New Mexico Tec	U.S.	222,000
9	Healthy Watersheds (Student Experiential Lear	8/1/15-7/31/17	NOAA	U.S.	93,000
10	Healthy Watersheds (Student Experiential Lear	10/1/18-9/30/20	NOAA	U.S.	150,000
11	STEM Cirricuculum and Technology Tools	9/1/15-02/28/18	ONR	U.S.	600,000
12	STEM Cirricuculum and Technology Tools	8/1/16-07/30/18	ONR	U.S.	500,000
13	STEM Cirricuculum and Technology Tools	1/1/19-12/31/20	ONR	U.S.	650,000
14	Studio Concept	10/1/16-9/30/17	EDA	U.S.	75,000
15	Student STEM Camps (Excite Camp, IGED)	11/1/16-8/31/17	(sub) UH-CTE	State	60,000
16	Student STEM Camps (ExciteCamp,IGED,IGAL	11/1/17-8/30/18	(sub) UH-CTE	State	60,000
17	Maui Film Festival FY17	2/23/17-9/30/17	HTA	State	75,000
18	Maui Film Festival FY18	10/1/17-9/30/18	HTA	State	75,000
19	Maui Film Festival FY19	10/1/18-9/30/19	HTA	State	75,000
20	BIO Conference	2/14/17-9/30/17	DBEDT	State	70,000
21	STEMworks Summer Interns	5/1/16-8/31/16	DLIR	State	12,150
22	Island Energy Inquiry	6/29/15-6/30/17	DLIR	State	495,000
23	Maui Film Festival FY17	1/1/17-12/31/17	County of Maui	Mau	25,000
24	Maui Film Festival FY18	1/1/18-12/31/18	County of Maui	Mau	27,500
25	Maui Film Festival FY19	1/1/19-12/31/19	County of Maui	Mau	25,000
26	Ka Ipu Kukui FY17	7/1/16-6/30/17	County of Maui	Mau	25,750
27	Ka Ipu Kukui FY18	7/1/17-6/30/18	County of Maui	Mau	25,000
28	Ka Ipu Kukui FY19	7/1/18-6/30/19	County of Maui	Mau	25,000
29	MHS Automotive Program FY17	2/1/17-1/31/18	County of Maui	Mau	45,000
30	MHS Automotive Program FY18	2/1/18-1/31/19	County of Maui	Mau	45,000

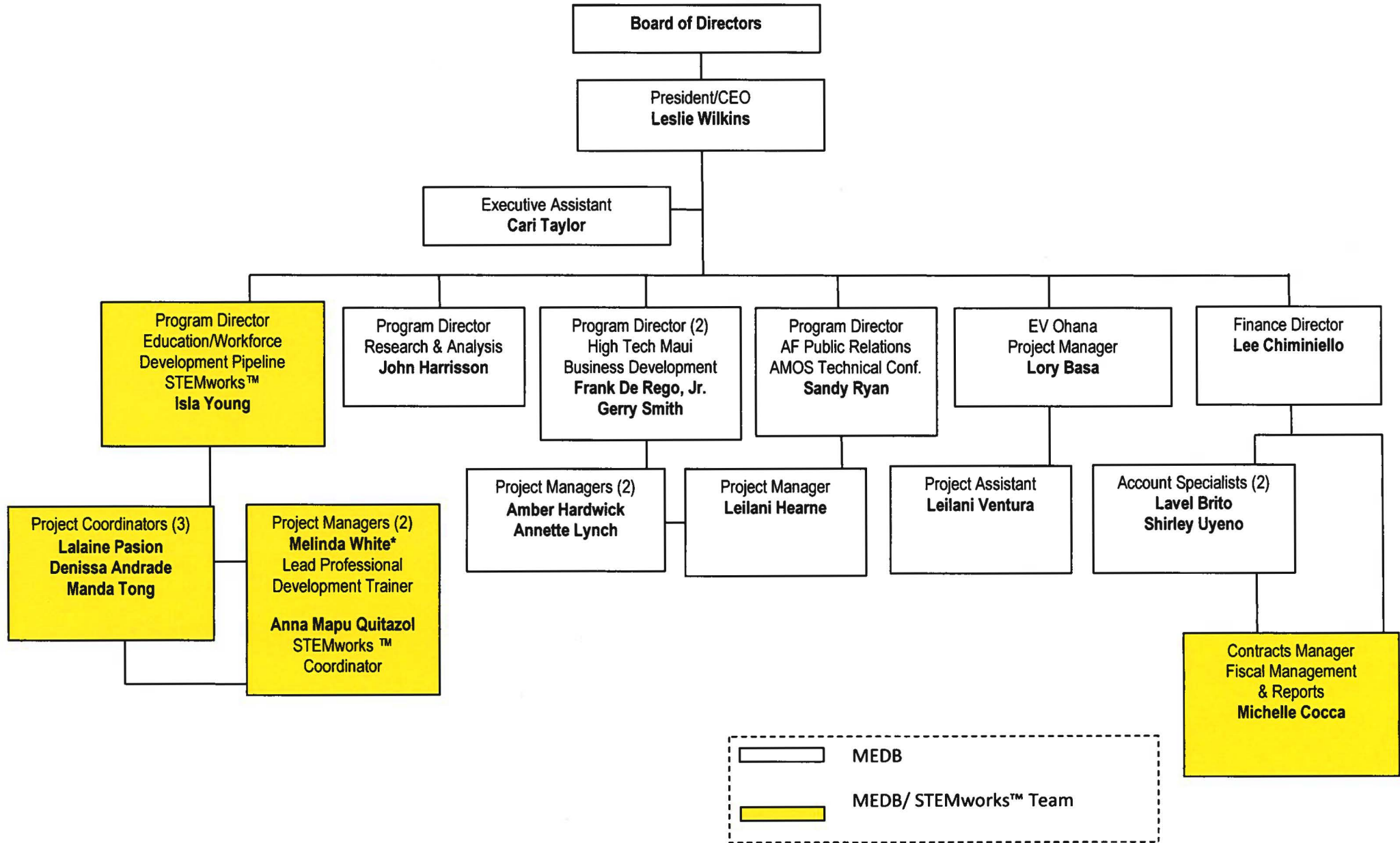
**ATTACHMENT E.e.
GOVERNMENT CONTRACTS, GRANTS, AND / OR GRANTS IN AID**

Applicant: Maui Economic Development Board, Inc.

31	MHS Automotive Program FY19	2/1/19-1/31/20	County of Maui	Mau	45,000
32	Economic Diversification + STEM Workforce Developme	7/1/16-9/30/17	County of Maui	Mau	830,000
33	Economic Diversification + STEM Workforce Developme	10/1/17-9/30/18	County of Maui	Mau	800,000
34	Economic Diversification + STEM Workforce Developme	10/1/18-9/30/19	County of Maui	Mau	815,000
35	Conference Sponsorships	7/1/17-9/30/18	County of Maui	Mau	95,000
36	Conference Sponsorships	10/1/18-9/30/19	County of Maui	Mau	65,000
37	EV Charging Stations Transition	10/1/18-9/30/19	County of Maui	Mau	100,000
38	Maui County Health Sector Partnership FY18	10/1/17-9/30/18	County of Maui	Mau	15,000
39	Maui County Health Sector Partnership FY19	10/1/18-9/30/19	County of Maui	Mau	55,000



Organizational Chart



STEM / STEMworks™ Program staffing - highlighted in yellow

**These projects staff members paid with leveraged funds*