



# Maui Makers Grant Application

## I. Background and Summary

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

Maui Makers provides training, technical assistance, space, tools, and resources for Maui residents and visitors, to advance the local economy, build skills, and promote self-sufficiency. By offering an inclusive Makerspace, open to all, Maui Makers provides a physical location with shared resources otherwise unaffordable or unattainable by individuals, where people gather to create, invent, and learn. A Makerspace is a dynamic workspace with access to collaboration, inspiration, and encouragement from others. The idea is similar to business incubators or co-working spaces, but instead of offering office space, Makerspaces provide a group workshop environment with cutting-edge tools like 3D printers and CNC (Computer Numeric Control) machines. There are hundreds of related spaces and groups around the world, known as Makerspace, Hackerspace, Fab Lab, and TechShop, with varied areas of focus, interests, and business styles. The Fab Lab, for example, grew out of the MIT class "How to Make (Almost) Anything," and it has retained an academic focus as it has spread around the world. A general tenet of a Fab Lab is public access and public sharing of anything created. Makerspaces are developed more organically, created by a group of community members with the idea of a shared educational workspace. There are as many variations of Makerspace as there are spaces, and there are hundreds around the world. Through its Makerspace, Maui Makers volunteers have hosted interesting and exciting classes, technical assistance, encouragement, and direction. It helps members achieve their goals by supporting their skill development and entrepreneurship, and by providing access to tools, training, and community for activities as varied as starting a business, educating children, or making a creative project. The focus on STEAM: science, technology, engineering, art/agriculture, math.

Our charter includes helping individuals creating projects and businesses, instructing members on safety and use of various tools and technology. Assisting Primary and secondary STEAM instructors with class support training and class props and equipment, we also host local groups such as 4H, Boy, Cub and Girl Scouts. Local business groups that provide outreach to the upcoming scientists and engineers. We also mentor both Highschool and College students in their projects for the schools. We have provided "workshops" at Local facilities like MEDB and UHMC. We have received equipment grants and donations from Maui County, Space Gambit, Sparkfun, and Instructables. Some of our 3D printers were donated to support our 3D prosthetics program which has printed and given free hands to local children with hand and arm deformities. Maui Makers received Sketchup Pro licenses and a \$2000 grant to start a Menehune Makers program. A 10000 grant for equipment from the County of Maui, as well as a boeing grant to host a booth at the Maui County Fair. At this time our space is run totally by

volunteers and there is no paid staff. Our member community is around 35 not including family, which we give big discounts to in the spirit of the Island Ohana.

Maui Makers LLC was started in 2010 by Jerry Isdale. Its first permanent shop location was at the Pu'unene School grounds at the invitation of Community Work Day (now Maui Malami Nui) and the Hawaii Department of Education. It consisted of a container and the old cafeteria. We still use the container for remote storage. From there we had a period of time trying to find a nicer facility moving between members houses, various schools, and other venues. In 2014 we acquired our 501 (c) (3) status and acquired our first space on the second floor of a warehouse next to the ocean (1000 sq ft). Three years ago, two of the members purchased a large piece of equipment that needed a truly commercial space to house and use. They invited the board to come and join them in this new facility offering us to help with the startup costs and some underwriting of expenses until we could get on our feet. We are still struggling but we have a great space to work from. We are currently occupying about 2000 sq ft of the nearly 3500 sq ft area.

## 2. The goals and objectives related to the request

Maui Makers has five primary goals:

- A. Outreach: communication and activities within the community of Maui
- B. Education: Teaching, sponsoring, and facilitating educational classes and workshops for the Maui community
- C. Physical maker space: Securement of locations for conducting activities and providing access to shared tools and resources
- D. Strategic alliances: Mutually beneficial partnerships to leverage scarce community resources
- E. Economic development: Increased employment opportunities for the Maui community

These goals are further defined below, including specific objectives and means for accomplishing them. The objectives can be achieved with anticipated resources, and the expected outcomes are tangible and quantifiable.

### A. Outreach

Maui Makers' outreach goals are to spread the message about why a Makerspace is important for the Maui community, build enthusiasm for learning and creating in a Makerspace, and develop a maker ethos on Maui. These steps will be taken to achieve these goals:

1. Educate the Maui community about the personal, economic, and educational benefits of participating in the activities and programs of a Makerspace, using these means:
  - Presence at major events
  - Radio

- TV
  - Print
  - Social media
- .
2. Recruit sufficient breadth and depth of membership to make Maui Makers an enduring and valued institution within the Maui community. We seek to remove monthly membership fees with this grant and open membership to as many people as possible while simultaneously maturing our educational programs and interorganizational outreach.

## **B. Education**

Maui Makers has these goals for education:

1. Create educational opportunities and skill-building activities to broaden the capacity for self-sufficiency and economic stability in the Maui community.
2. Excite all ages of the community about the joy of learning and making.
3. Create a community of mentors that shares with others the skills necessary for making.

specific means for meeting these goals include the following:

1. Host expanded STEAM youth classes and workshops under the existing Menehune Makers program.
2. Host advanced technology classes.
3. Pilot Teach the Teacher STEAM workshops to leverage Maui Makers' participation of the K-12 educational community.

## **C. Physical Maker Spaces**

This goal is to establish and sustain facilities necessary to provide training, space, tools and other resources for Maui residents, to improve the local economy, build skills, and promote self-sufficiency.

Specific objectives to meet this goal:

1. Enhance community access to our Makerspace facility on Maui.
2. Identify opportunities to enhance and improve the safety and comfort of our participants.
3. Identify long-term opportunities for expansion and lasting viability.

## **D. Strategic Alliances**

Maui Makers aims to cultivate mutually beneficial partnerships to leverage community resources and advance our mission.

Specific objectives to meet this goal are:

1. Educate Maui community leaders about the economic and educational benefits of a Makerspace on Maui.
2. Foster beneficial partnerships with local community organizations and individuals.
3. Extend the global maker community.

## **E. Economic Development**

This goal is to develop maker projects that strengthen and diversify the local economy through the development and expansion of businesses that will provide new jobs for the Maui community.

Specific objectives to meet this goal

1. Develop a marketable skills training program that demonstrates a capability to generate jobs.
2. Develop an entrepreneur program that fuels growth in Maui's small business community by giving those with a dream the skills necessary to implement their vision and turn it into a sustainable reality.
3. Provide private space(s) for makers.

## **3. The public purpose and need to be served**

What will your child be when they grow up? Maybe a quantum automotive programmer, or a multi-phasic data sculptor.

OK, we made those jobs up. But consider this: just ten years ago, 'social media manager' or 'mobile app developer' would have seemed like imaginary job titles to most. With the accelerating pace of social and technological change, the World Economic Forum estimates that 65 percent of children today will end up in careers that don't even exist yet. Yesterday's classroom won't prepare our kids for tomorrow's job market. It's time to rethink education, teaching the lessons they'll need for careers we can only imagine.

If you are familiar with the technology or educational sectors, you have undoubtedly heard that STEM, which is an educational focus in science, tech, engineering, and math, is being changed to STEAM, to include the arts. This is an initiative that is being accepted on an increasing scale by institutions, corporations, and education and tech professionals, and we here at Maui Makers are pushing the envelope of STEAM.

STEAM can save the world and it can save our kids too by making their future bright. STEM jobs are expected to grow by 16% in the US between 2014 and 2024 compared to only 11% for other sectors\*. And right now, science & engineering careers earn more than double the income

of the median job in the United States.\* Despite this, math performance in US students is faltering and STEM graduates are dropping out of their fields. And let's not even get started on some of the inequities for women and minorities.

The US Department of Education reports that the number of STEM/STEAM jobs in the United States will grow by 14% from 2010 to 2020, growth that the BLS terms as "much faster" than the national average of 5-8 % across all job sectors.

Computer programming and IT jobs top the list of the hardest to fill jobs, according to a recent study done by McKinsey. Despite this, the most popular college majors are not STEAM related.

"The number of graduates in the STEM fields is growing. Only .8% annually" according to the same McKinsey study. So how can we get more kids involved in STEM, and create a strong and able workforce? By teaching STEAM in a Makerspace.

Makerspaces encourage students to try, fail, and try again—just as the world's most amazing innovators do in their labs and studios every day. Makerspaces range from elaborate fabrication shops to small book carts full of craft supplies, but no matter the size or amount of equipment, they need only foster curiosity, discovery, and learning.

The terms STEAM and makerspace are often thrown around together. Here's why: The STEAM education movement emphasizes 21st-century skills, project-based learning, and the interconnectedness of academic subject areas. Teaching STEAM helps students become more proficient in collaboration, questioning, problem-solving, and critical thinking. How do makerspaces fit in? Makerspaces are a hands-on method for STEAM learning, giving students a physical space to explore science, technology, engineering, arts, and mathematics.

## 4. Describe the target population to be served

Eight essential target groups enable a makerspace to thrive. Maui Makers goal is for each group to know what Maui Makers is and what it can offer them.

1. **Entrepreneurs:** individuals and groups of people building projects for future businesses. Hawaii is ranked eighth in the nation for most entrepreneurial activity, according to a report in CNN Money.
2. **Makers:** tinkerers who like to make their own things and hack exciting things for non-profitable purposes. We believe this demographic to be 100% of the population of Hawaii at 1.4 million people statewide.
3. **Children:** students from primary school to college, ages 10-17. This year, HIDOE schools enrolled 168,095 students, and charter schools saw an enrollment increase of 11,160 students.
4. **Internal members:** members at the the makerspace institution.
5. **Researchers:** people doing organized and systematic investigation via traditional established institutions. Hawaii has more scientific observatories than anywhere else in

the world, and there are over 23,278 science and engineering employees in Hawaii, according to the NSF.

6. **Students:** youth from high school and college who need help with their school science projects.
7. **Companies:** established organizations that deliver a product or service for revenue and profit. Hawaii's small businesses employ 263,364 people, which is 52.4% of the private workforce according to the US Small Business Administration.

## 5. Describe the geographic coverage

Our focus is Maui County, but through our organizational partners, events, and networking, we often reach all of Hawaii and even the international stage. Our aspirations are to move to a multi island organization.

## II. Service Summary and Outcomes

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

#### a. Scope of work

The scope of work for the 2019 fiscal year will include weekly STEAM workshops (5-10 participants each) in our makerspace facility; six or more STEAM workshops (20-100 participants each) outside the makerspace at local events; and 5 or more custom STEAM workshops for outside organizations. For an estimated total of 1000 direct participants and over 5000 indirect student interactions.

Maui Makers will be responsible for ensuring, through the assessment procedures discussed in section II.3, that each of these workshops meets our goal of providing a quality educational experience to the students and educators we are serving.

In addition to our programs a major portion of the grant scope is time management and support services for our skilled volunteers. We will initiate a broad based social media and SEO campaign to bring in more members, volunteers, educators, students, and sponsors. This will allow us to increase the effectiveness of our members and their ability to network with students and teachers. Another key to enabling our volunteers to become more effective will be hiring a program director and volunteer/event coordinators who can better plan, market and execute events and programs. These staff will also work on long term planning and execution of a master plan enabling organization stability and longevity. Right now these functions are done by unpaid/extremely skilled volunteers whose time is taken away from being mentors in the programs.

Maui Makers will also ensure that our activities and organization are administered properly and effectively and according to established bylaws, conflict of interest policies and Hawaii State Law through the guidance of our Board of Directors.

## b. Tasks and Responsibilities

- i. Outreach
  1. Targeted Maui Makers social media ads to create a more engaging and more reliable presence.
  2. Host a booth for at least two major Maui events.
  3. Develop and market a video series explaining the benefits of Making and Maui Makers.
  4. Bring at least one globally recognized maker to an event for the Maui community.
- ii. Education
  1. Bimonthly Menehune makers steam/play based public workshops per month
  2. Establish a staff position to manage volunteers for a mentorship program for high school and college level capstone projects.
  3. Bimonthly advanced technology workshops per month; 3d printing, Arduino programming, etc.
  4. Annual holiday based Maker events; Halloween Costume and Santa build events.
  5. Develop and market a teach the teacher/supplemental science day service to Maui educators.
- iii. Physical Makerspace
  1. Increased marketing to increase participation of our events and services.
  2. Dust collection system upgrade
  3. Develop a master plan that includes ownership of the facilities
- iv. Strategic Alliances
  1. Partner with County of Maui, State of Hawaii, and large Maui landowners to identify long term land development options and develop a master plan for them.
  2. We will build on our programmatic alliances and local events support. We provide STEAM based services and activities to just about every nonprofit on Maui. We are an emerging network of professional mentors with industrial experience. We bring volunteers, equipment, lesson plans, and supplies to make other organizations events bigger, better, and more exciting. Previous examples include.
    - a. MEDB
      - i. Provide programmatic support for various Women in Technology events.



- ii. Paper circuits, pneumatic robotics, arduino programming, etc.
  - b. Boy Scouts
    - i. Mentor cub scout troops in STEAM projects to enable badge competition.
    - ii. Pneumatic robotics and pinewood derby.
  - c. Girl Scouts
    - i. Mentor scout troops in STEAM projects to enable badge completion.
    - ii. Paper rockets
  - d. Malama Maui Nui
    - i. Plastics and tire recycling using the precious plastics program
  - e. 4H
    - i. UHMC STEAM event support
    - ii. Paper rockets, electrical resistance
  - f. Maui Arts and Cultural Center
    - i. Family fun and play day booth development and manning.
    - ii. Black hole simulation, paper rockets, straw rockets, death star shooting gallery, paper airplanes, art project templates
  - g. Haiku Flower Festival
    - i. Black hole simulation, death star shooting gallery, interactive gear exhibit
  - h. UHMC
    - i. Engineering capstone project mentorship
  - i. Maui Science Museum
    - i. Programmatic development and support
    - ii. Marble exhibit, infinity mirrors, black hole simulation
  - j. Seabury
    - i. TEDx youth booth
  - k. Make Magazine
    - i. Oahu mini maker fair
  - l. Nonprofit organizational support for other aspiring Makerspaces
    - i. Oahu Maker Space
    - ii. Kauai Maker Space
    - iii. Molokai Makerspace
  - m. Dept of Education
    - i. Teach the teacher training
  - n. Montessori of Maui
    - i. On location STEAM workshop
- v. Economic Development
  - 1. Develop a Marketable Skills Training course and track post-course employment of those completing the training.

2. Develop an Entrepreneur Program course and track post-course employment of those completing the training.

## **2. Provide a projected annual timeline for accomplishing the results or outcomes of the service;**

We will provide all of the above programs outlined above throughout the year, weekly and monthly. We will collect evaluation data for each event. These evaluations will be analyzed and incorporated into our annual report. This will help us direct our efforts for future events. The success of our marketing drive will be reported on the annual report.

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

The activity-level in a makerspace defines the success of a makerspace. This can simply be measured by how much the machines are used and how many visitors the makerspace has. How many days were the machines in the machine workshop used individually? What is the number of monthly visitors? How many workshops with a fee were facilitated this month? How many free events/activities were arranged this month?

Maui Makers will evaluate its impact on its participants through pre/post educational surveys and annual impact demographic assessments. Anonymous assessments via SurveyMonkey surveys developed by Maui Makers staff under the guidance of a Hawaii educator for those workshops will be conducted pre and post each workshop, and data compiled after each workshop. Information gleaned from those assessments will be utilized to further improve the following workshops. Assessment surveys for those workshops will be conducted as well (pre and post), and data utilized to measure success for evaluation and adequate reporting of success. In addition to the surveys, Maui Makers will conduct interviews of the educators after they and their students have gone through the program to further evaluate the success, and to find ways of further improving the programs/workshops.

Evaluations of the workshops shall be reviewed by Program Staff, the Board of Directors, and the Education Committee to see where there are areas for improvement, and will take any negative or positive evaluations into consideration for the future planning of educational programs and workshops.

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 all of the STEAM workshops Maui Makers shall submit aforementioned surveys, interviews, statistical evaluations, media, etc. to the applicable expending state agencies. Reports will be submitted to the expending state agencies at the conclusion of the grant.

### III. Financial

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

a. Budget request by source of funds

<b>BUDGET REQUEST BY SOURCE OF FUNDS</b>				
Period: July 1, 2019 to June 30, 2020				
Applicant: Maui Makers				
Budget	Total State	Total Federal	Total County	Total Private/Other
Categories	Funds Requested	Funds Requested	Funds Requested	Funds Requested
	(a)	(b)	(c)	(d)
<b>A. PERSONNEL COST</b>				
1. Salaries	76,600			
2. Payroll Taxes & Assessments	11,490			
3. Fringe Benefits	22,980			
<b>TOTAL PERSONNEL COST</b>	<b>111,070</b>			
<b>B. OTHER CURRENT EXPENSES</b>				
1. Airfare, Inter-Island	5,000			
2. Insurance	7,000			
3. Lease/Rental of Equipment	5,000			
4. Lease/Rental of Space	48,000			
5. Staff Training	0			
6. Supplies	15,000			
7. Telecommunication	1,300			

8. Utilities	2,400			
9. Marketing	24,000			
10. Cleaning	4,000			
11. Legal/Accounting	5,000			
12. Shop Consultant	12,000			
13. Marketing Consultant	12,000			
14. Software	5,000			
15				
16				
17				
18				
19				
20				
TOTAL OTHER CURRENT EXPENSES	145,700			
C. EQUIPMENT PURCHASES	20,400			
D. MOTOR VEHICLE PURCHASES				
E. CAPITAL				
TOTAL (A+B+C+D+E)	277,170			
		Budget Prepared By:		
<b>SOURCES OF FUNDING</b>				
(a) Total State Funds Requested	277,170	Cole Santos		8083448870
(b) Total Federal Funds Requested		Name (Please type or print)		Phone
(c) Total County Funds Requested		<i>Paul Sable</i>		1/16/19
(d) Total Private/Other Funds Requested		Signature of Authorized Official		Date
		PAUL SABLE SECRETARY		
TOTAL BUDGET	277,170	Name and Title (Please type or print)		

b. Personnel salaries and wages

POSITION TITLE	FULL TIME EQUIVALENT	ANNUAL SALARY A	% OF TIME ALLOCATED TO GRANT REQUEST B	TOTAL STATE FUNDS REQUESTED (A x B)
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Project Director	0.5	\$35,000.00	100.00%	\$ 35,000.00
Program Specialist	1	\$41,600.00	100.00%	\$ 41,600.00
<b>TOTAL</b>				76,600.00

c. Equipment and motor vehicles

DESCRIPTION EQUIPMENT	NO. OF ITEMS	COST PER ITEM	TOTAL COST	TOTAL BUDGETED
Computer Desktop PC	10	\$860.00	\$ 8,600.00	
Vive Pro	1	\$800.00	\$ 800.00	
Formlabs Form 2	1	\$5,000.00	\$ 5,000.00	
Folger Tech FT-6	1	\$1,000.00	\$ 1,000.00	
Dust Collection System	1	\$5,000.00	\$ 5,000.00	
<b>TOTAL:</b>	14		\$ 20,400.00	

**JUSTIFICATION:**

DESCRIPTION OF MOTOR VEHICLE	NO. OF VEHICLES	COST PER VEHICLE	TOTAL COST	TOTAL BUDGETED
<b>TOTAL:</b>				

**JUSTIFICATION**

d. Capital project details

N/A

e. Government contracts, grants, and grants in aid

N/A

2. The applicant shall provide its anticipated quarterly funding requests for the fiscal year 2019.

Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
\$88,343	\$62,943	\$62,943	\$62,943	<b>277,170</b>

3. The applicant shall provide a listing of all other sources of funding that they are seeking for fiscal year 2019.

We have not identified other grants for 2019 yet. We will seek private, county, and federal grants in 2019. We hope this grant will provide the organization with the staff we need to pursue a wider range of grants in the near future.

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 2019 for program funding.

N/A

6. The applicant shall provide the balance of its unrestricted current assets as of December 31, 2017.

Bank Account	Donated Tool Assets	Total
2512	27432	29944

## IV. Experience and Capability

### 1. Necessary Skills and Experience

Maui Makers has been building education programs in STEAM for various target populations on Maui for over 4 years. In particular we build programs for reaching equity of underrepresented populations in STEAM fields including digital media, geospatial technology, computer-aided design and 3D printing, virtual reality, coding and programming. energy. environmental sciences and agriculture. We have done hundreds of events and workshops over our

Our current board members who are voluntarily offering the classes and programs possess a very broad range of skills including:

#### **Founder and Board Member Jerry Isdale**

Jerry Isdale is a software engineer with a long career in a variety of leading edge software systems from early computer animation for film and TV to DARPA and other DoD funded research projects. He was the lead engineer for the DARPA PENCIL project in 1994-96, developing a pen notebook computer/email system providing interactive maps, forms and coordination applications for the US Army National Guard. He was a developer and research scientist on several other DARPA projects for ISX Corporation and HRL Laboratories LLC. He worked on Aerovironment Global Observer Apple OS X based Ground Control Segment until 2009 when he left to start Maui Makers, a makerspace on the island of Maui, HI. He will be

responsible for coordinating and participating in various engineering and educational projects for the organization.

**Board President Laura Ulibarri**

Laura Ulibarri has a 25-year career managing and developing advanced R&D in optics, lasers and imaging sciences, and possesses an M.S. in Physics. She has 12 years of program management and supervisory experience in both the public and private sector. She has worked for Rockwell International, Boeing and the Environmental Research Institute of Michigan. In her current position, she is the Deputy Chief of the Air Force Research Laboratory's Space Electro-Optics Division, where she directs technology development, test and evaluation and observatory facility and equipment operations at the Air Force Maui Optical and Supercomputing (AMOS) Site in Hawaii and the Starfire Optical Range in New Mexico. She has responsibility for facilities and specialized scientific equipment worth \$660M. She leads 422 personnel, executing \$116M/yr portfolio of AF, DoD and national R&D. Her research portfolio and facilities were recognized in 2010 and 2012 by the AF's Scientific Advisory Board as "world class".

She has been a resident of Maui, HI since 2006, and first started working the AMOS site in 2001. Her direct leadership at AMOS since 2008 has increased the research budget at the site by 4x and reduced the annual costs of operating the equipment and facilities. She spearheaded a 5-yr overhaul of the AMOS facility, eliminating obsolete equipment and creating a modern observatory that is poised to meet the challenges of the 21st century. She also expanded the AF's STEM outreach in Maui, specifically hiring an outreach coordinator with a background in education and research. This outreach program has been recognized as a model program, and has worked successfully with the Maui Economic Development Board to establish a STEM lending library for Maui County, and providing teacher training and routine educational outreach activities, primarily at the kindergarten through middle school level. Laura also served on the Board of Directors of the Adobe Whitewater Club for four years, and volunteered her time supporting river access and conservation issues in New Mexico.

**Board Secretary, Facilities Manager, Education, Executive Committee Member,  
Registered Agent - Paul Sable**

Paul Sable has a Bachelor of Fine Art from Antioch College, minoring in Architecture. He is a multi business entrepreneur, with an extensive career in General Contracting and remodelling, Public Art for Hospitals, as well as being a Licensed Coast Guard Captain and avid waterman. He has traveled extensively over 5 of the seven oceans and all of the continents, he speaks 3 languages fluently. His skill set includes master woodworker with 52 years experience. Also including cabinet making, furniture making, interactive art, sculpture, musical instruments, machine tools, gas welding, plastics fabricating and glassworking. He has been in Maui and a member of MM for 3 years.

**Board Member, Chairman of the Education Committee - Pete Menningen**



Pete Menningen recently has retired from a 41 year career at Sears Roebuck Product Development Labs. He started out as a simple technician in the electro-mechanical group working with engineers on products with high and low speed mechanisms. As he progressed he moved to Power tools, outdoor sports items, building products, furniture, toys and games, power tools, HVAC equipment, small and large appliances, automotive lift equipment. He has worked on teams with over 50 professional engineers designing fixtures, jigs and equipment to run automated tests to US Government standards for performance and durability. He learned both Mechanical and architectural design in High School as well as his major which was Electronics. When he ended his career with Sears he was both the system integrator as well as the testing lab production engineer in charge of a 130,000 sq ft facility. His design responsibility was from bar napkin sketch until full operation as well as connecting with the Sears IT network for data collection.

He arrived on Maui in November 2014 and joined Maui Makers shortly after arrival having discussed the organization with Jerry before he left the Chicago area. He has shared his extensive tool collection as well as his broad product and engineering knowledge. A believer in continuous education has become well versed in Fusion 360 CAD drawing, 3d printing, and machine controlled machining.

His personal activities includes having been an Illinois State Volunteer Hunter Safety Instructor (20+ yrs), BSA assistant Scout Leader, officer and board member of a few Hunt clubs, Outdoor activities of fishing, hunting, and shooting.

### **Board Treasurer, Education Committee Member - Buck Joiner**

Four words describe Buck Joiner and his mission in life: integrity, commitment, energy and vision. His business card says these four simple words at the top followed by "here to help" at the bottom. Joiner has lived in Maui for over 35 years. After a long career as a nuclear engineer, where Joiner first operated with the military when he helped design and build the nuclear power plant for the USS Nimitz aircraft carrier. His extensive volunteer service within the community has given him a reputation for helping his fellow Maui residents. He is versed in CAD drawing and 3d printing, as well as many other useful skills. Buck also uses his engineering skills and background to make prosthetics, using his 3D printer, for Maui residents, and he takes particular pride in making prosthetics for children.

## **2. Facilities**

Our facilities currently include a Makerspace in Wailuku approximately 2500 Square feet with an extensive array of loaned or donated equipment from the members. We also have a 40 foot container for storage in Dept of Education facility in Puunene..

- Fully equipped wood shop where we can build anything from cabinets, furniture, and musical instruments.

- Metal working, welding, and forge tools we use to teach vocational skills.
- Electronics room where we teach classes in CAD, 3d printing, soldering, circuit design and fabrication. This is also where we do arts and crafts and other clean activities.
- Small Business Incubation Areas - We licence space to companies looking for a place to get started.
  - Agricultural Drones Maui
  - Maui Scooter Rental Company
  - Sable Studios and Art
  - P and L Maui Fabricating
  - No Ka Oi Knives
  - Hawaii Displays and Signs

## V. Personnel: Project Organization and Staffing

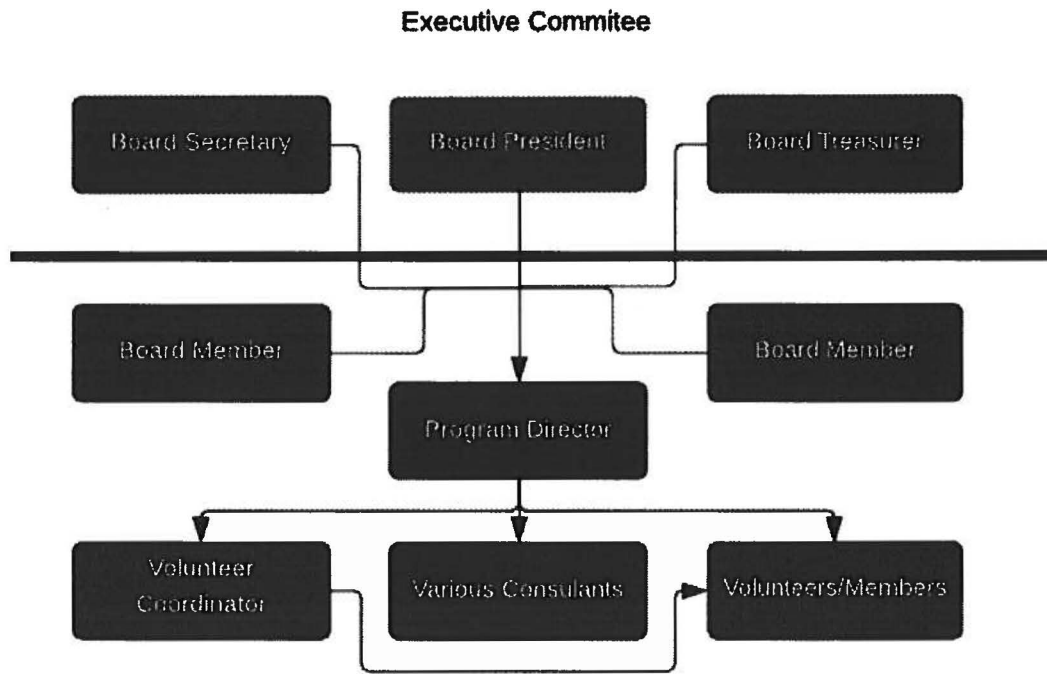
### 1. Proposed Staffing, Staff Qualifications, Supervision and Training

This grant will have a 20 hour a week project director to write new grants, execute the strategic plan, and coordinate staffing, volunteers, and other resources needed to implement the vision of the organization. The director will hire a full time employee to run the workshops, manage the space for the public and members, and assist in the implementation of the strategic plan. The director will also contract consultants to do cleaning, manage the shop maintenance, and organize marketing efforts.

#### **Project Director - Cole Santos**

Cole has a degree in Philosophy from the University of Hawaii at Manoa. He traveled around the world on the Semester at Sea study abroad program. Cole has certificate for the Marine Option Program with a specialization in aquaculture where he received an award for excellence in ocean research. He has over 10 years of experience in project based learning. His past jobs include working for the County of Maui Department of Water Supply as a Conservation Specialist and in Oahu as a Scuba Instructor. Cole has been a lifelong learner and skilled Maker, with a strong interest in sustainability technology and space exploration. He co-wrote a successful \$500,000 DARPA grant, and was a key member of the Hackerspace Earthship, a project to "develop space hardware for use in extraterrestrial habitats, i.e. urban food production, sustainability technology, small scale industrial processing, water purification, waste treatment, algae farming, environmental monitoring tools, advanced manufacturing, etc."

## 2. Organization Chart



## 3. Compensation

Program Director, Cole Santos, \$35000

Volunteer Coordinator, Unknown, \$41600

## VI. Other

### 1. Litigation

The applicant shall disclose any pending litigation to which they are a party, including the disclosure of any outstanding judgement. If applicable, please explain. N/A

### 2. Licensure or Accreditation

The applicant shall specify any special qualifications, including but not limited to licensure or accreditation that applicant possesses relevant to this request. N/A

### 3. Private Educational Institutions

The applicant shall specify whether the grant will be used to support or benefit a sectarian or nonsectarian private educational institution.

Yes. We offer our programs and workshops for all organizations and groups. Funds will not be spent to support any private educational institution, however they will benefit from our programmatic support.

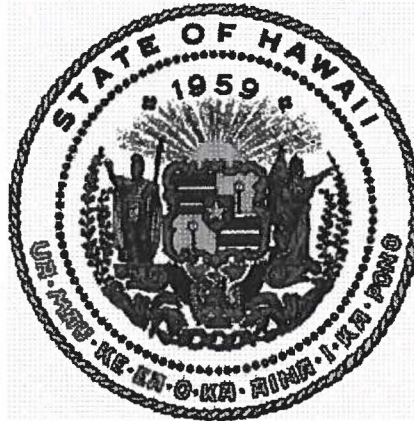
### 4. Future Sustainability Plan

The applicant shall provide a plan for sustaining after fiscal year 2018-19 the activity funded by the grant if the grant of this application is: (a) Received by the applicant for fiscal year 2018-19. but (b) Not received by the applicant thereafter.

The Mauimakers proposed program is not new but its next phase of expansion is solely dependent on the requested state funding. As part of the grant we will prepare a long term sustainability master plan. This request will help the program ramp up to serve unmet demand and continue to expand the reach of the program.

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.

## 5. Certificate of Good Standing



### 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 MAKERS, INC.**

was incorporated under the laws of Hawaii on 07/28/2014 ; 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 11, 2019



### 5. Declaration Statement

#### DECLARATION STATEMENT OF APPLICANTS FOR GRANTS PURSUANT TO CHAPTER 42F, HAWAI'I REVISED 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, Hawai'i 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, Hawai'i 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, Hawai'i 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, Hawai'i 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 MAKER INC.

(Typed Name of Individual or Organization)

*Paul Sable*  
(Signature)

1/16/19  
(Date)

PAUL SABLE  
(Typed Name)

SECRETARY  
(Title)

## 6. Public Purpose

The applicant shall specify whether the grant will be used for a public purpose pursuant to Section 42F-I 02, Hawaii Revised Statutes.

1. The name of the requesting organization or individual:  
Maui Makers
2. The public purpose for the grant;  
Building Hawaii's future workforce by developing students' critical thinking and problem solving skills to be career ready through a multifaceted, year-long educator and student professional development, career awareness and work-based learning programmatic assistance.
3. The services to be supported by the grant;
  - a. Reduced or free membership for public to a community based workshop
  - b. Internships and Mentoring
  - c. STEAM Educational Programs
    - i. K-12 Workshop
    - ii. Adults
4. The target groups;
  - a. Entrepreneurs
  - b. Makers
  - c. Children
  - d. Internal members
  - e. Researchers
  - f. Students
  - g. Companies
5. The cost of the grant and the budget.
  - a. Grant: \$ 277,170
  - b. Total Budget: \$277,170