

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



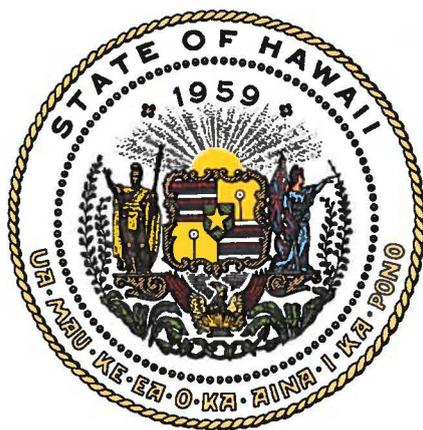
AUTHORIZED SIGNATURE

Neal Atebara, MD, Vice Chair

PRINT NAME AND TITLE

01-16-19

DATE



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

HAWAII ACADEMY OF SCIENCE

was incorporated under the laws of Hawaii on 11/19/2001 ; 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 09, 2019

Director of Commerce and Consumer Affairs



**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.

Hawaii Academy of Science
(Typed Name of Individual or Organization)


(Signature)

01-16-19

(Date)

Neal Atebara, MD
(Typed Name)

Vice Chair
(Title)

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

If the applicant is an organization, the applicant shall submit one (1) copy of a certificate of good standing from the Director of Commerce and Consumer Affairs that is dated no earlier than December 1, 2018.

See Page 3

2. Declaration Statement

The applicant shall submit a declaration statement affirming its compliance with Section 42F-103, Hawaii Revised Statutes. ([Link](#))

See Page 4

3. Public Purpose

The applicant shall specify whether the grant will be used for a public purpose pursuant to Section 42F-102, Hawaii Revised Statutes. ([Link](#))

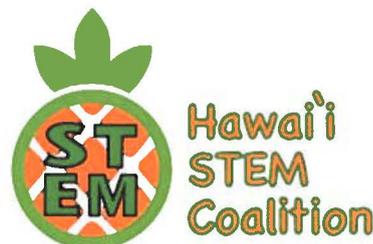
Although this grant is not directly public purpose, the outcome is a value to both education and workforce development and will benefit a portion of the public.

I. Background and Summary

1. Brief Description of the Hawaii STEM Coalition:

The Hawaii Academy of Science (HAS), The Hawaii Association of Future Farmers of America (HAFFA), Hawaii First Robotics (HFR), Hawaii State Science Olympiad (HSSO), Science Bowl and VEX Robotics began in 2018 as an informal meeting amongst volunteer-led STEM organizations for students in K-12.

Through these discussions, the group recognized that working in silos limited the potential of each organization. Each STEM organization seeks funding from the same list of sponsoring agencies. Data on STEM education collected by each organization is fragmented and only gives a small piece of the larger picture of STEM education in Hawaii. Working together, on the other hand, holds the promise of collecting real data on STEM education in the K-12 school system, working in conjunction with the Department of Education and the University of Hawaii. Working together will allow for a collective database of STEM professionals, volunteers, equipment, students, and teachers Statewide. A more organized system of collaboration is critical to ensuring the continuation of quality STEM programs in Hawaii. Thus, the ***Hawaii STEM Coalition*** was created.



Summary of Proposed Project:

In Hawaii, most of the student educational programs and competitions and programs that promote science, technology, engineering and math (STEM) are run **solely by volunteers**. Over the years these organizations have not been able to expand their existing programs due to the lack of resources, staffing, funding and time. Some of these

organizations faced operational shut down at some point in the last decade.

We are seeking **one grant** that will be used to grow all current programs, and a small amount of additional funding for a Feasibility Study into the ROI of investing in STEM enrichment programs in Hawaii's schools, grades K-12. The research will also help us to identify future sustainable funding from private foundations, corporate donors, as well as available federal funding to continue these programs in subsequent years.

The results of the research will be provided back to the DOE and the legislature for their information and use, and the strategic program funding will be shared among the five nonprofits within this coalition. \$235,000, of which \$205,000 will provide strategic program support for the five different nonprofit STEM programs, and \$30,000 for a half-time researcher to work with the Coalition to complete the research study, and identify future sustainable, non-Hawaii government funding.

2. Goals and Objectives:

(1) To create a unified initiative of volunteer-run Hawaii STEM organizations that would allow expansion of their educational programs by leveraging shared resources, called the **Hawaii STEM Coalition**. (2) To gather Statewide longitudinal data to track student STEM involvement, starting from K-12 and continuing through to Post-Secondary and career placement within STEM fields. This data can be used to identify specific needs within Hawaii's workforce development.

3. The public purpose and need to be served

Early exposure and education in the Science, Technology, Engineering and Mathematics (STEM) are vital to Hawaii's future. These skills are in high demand, and this demand is projected to continue to increase dramatically in the future. STEM provides our students with the critical thinking and methodologies necessary for a robust workforce. STEM enrichment programs, often run entirely by volunteers, play an important role in augmenting traditional classrooms, particularly for public schools in underserved areas. Hawaii STEM Coalition programs offer hands-on opportunities to solve real-world problems using 21st century tools and technology.

4. Describe the target population to be served

The target population includes local K-12 students throughout the State of Hawaii.

5. Describe the geographic coverage

This Coalition of volunteer-run STEM organizations serves 9,658 students and volunteers throughout the State of Hawaii, grades K-12.

II. **Service Summary and Outcomes**

The Service Summary shall include a detailed discussion of the applicant's approach to the request. The applicant shall clearly and concisely specify the results, outcomes, and measures of effectiveness from this request.

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

HAWAII STEM COALITION: Organization Member Profiles

The following members of the Hawaii STEM Coalition have unique STEM platforms that contribute to the learning outcomes and workforce development needs described in the proposal. Below is a brief summary of each organization, its mission, reach and overall contribution to the State of Hawaii. The Hawaii STEM Coalition is open to all STEM organizations, and it will continue to grow and gather important data that has not been collected previously.

The Hawaii Academy of Science -
Founded in 1925, the Hawaii Academy of Science (HAS) is a private 501(c)(3) non-



**HAWAII ACADEMY
OF SCIENCE**

profit professional society that started as a lead organization in bringing scientific chapters, groups and associations together to discuss topics relevant to the culture and community. Over the years HAS became the state affiliate the American Association for the Advancement of Science (AAAS), the world's largest general scientific society as well as an affiliate of the International Science & Engineering Fair (ISEF)/Science for the Society and Public. The mission of the Academy is to create a better world through Science and Education. With this mission in mind, the Academy has conducted the Hawaii State Science & Engineering Fair (HSSEF) for middle and high school students every year since 1958 along with symposiums, workshops, outreach events and scientific community gatherings. HAS is excited to revisit its collaborative roots by working with the scientific community to meet common goals through a unified effort through the establishment of the Hawaii STEM Coalition. HAS will provide in-kind support to the proposed project.

Hawaii Association of Future Farmers of America (HAFFA)



The National FFA Organization was founded in 1928 and the Hawaiian Association FFA was chartered in 1929. FFA programs were found throughout the Territory in intermediate and high schools. Agriculture Education included agriculture production and FFA leadership training, which featured competitions in public speaking and other ag-related activities.

This proud legacy almost ended in 2010, a low point in agricultural education in the public schools. Enrollment in Natural Resources and the FFA intra-curricular program diminished to an all-time low, due to factors including Weighted Student Formula (WSF) funding and an emphasis on pure academics as opposed to applied sciences. Thanks to the efforts of a core group of agriculture teachers and external organizational support, the program survived and is now beginning to thrive.

The FFA is uniquely poised to prepare students to apply STEM knowledge to research and to agricultural production and agri-science careers. After facing near extinction, the Hawaii FFA has re-emerged with a strategic view as a structured and valuable component of the greater agriculture movement. Operationally, we are guided by the United Nations Sustainable Development Goals, the strategic plans of the HDOE and

our supporters, and most recently by the Governor's call to double local food production by 2020.

Within this strategic context we seek \$7,000 to focus on building Quality Programs by funding Supervised Agricultural Experience Projects (SAEP) at seven pilot schools (\$1,000 x 7 schools = \$7,000). The funds will be used to support SAEPs on school grounds that will test innovative food production methods and result in projects worthy of entry in the Science and Engineering or the FFA Agriscience events.

Longer-Term Goals

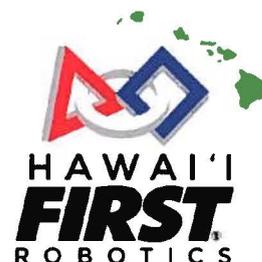


We believe that we need help to tell our story about our history and so that the system will support FFA programs as if our future depends on it. Longer-term actions will be informed by student voice, economic and labor needs, and teacher input. At minimum, these must include facilities upgrades sufficient to engage students in STEM-based agricultural production and research; professional development opportunities including presentations by world-class local and out-of-state presenters; and smart-device learning to enable students to learn and share through the media of their choice.

We will continue to honor our motto "Learning to Do, Doing to Learn, Earning to Live, and Living to Serve" in a way that merges 21st Century science and technology with Hawaiian cultural values.

Hawaii FIRST Robotics (HFR)

The Mission of Hawaii FIRST Robotics is to inspire young people to be science and technology leaders and innovators, by engaging them in exciting mentor-based programs that build science, engineering, and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication and leadership.



Hawai'i FIRST Robotics (HFR) is a 501 (c)(3) organization that plans, organizes, underwrites and hosts FIRST robotic tournaments and expos for teams of students ages 6 through 18 (K through 12th grade) in Hawai'i. HFR serves as the official FIRST partner in Hawai'i for FIRST LEGO League Jr., FIRST LEGO League, and FIRST Tech Challenge.

HFR partners with the national FIRST organization to implement the mission, rules and guidelines of FIRST by working to motivate young people to pursue education and career opportunities in science, technology, engineering, and math (STEM), while building self-confidence, knowledge, and life skills. HFR was formerly known as Hawai'i FIRST LEGO League (HFLL). The name was changed organizationally to accurately reflect all three of the FIRST programs that Hawaii FIRST Robotics is responsible for coordinating.

FIRST is more than just robots. FIRST participation is proven to encourage students to pursue education and careers in STEM-related fields, inspire them to become leaders and innovators, and enhance their 21st century work-life skills.

In Hawaii, HFR plans, organizes, underwrites, and hosts FIRST Tournaments and provides opportunities for students from Kindergarten through High School to collaborate and compete, and in doing so, fulfill the following needs:

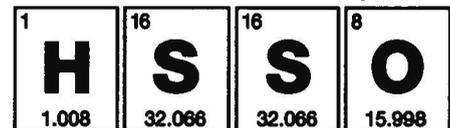
- 1 Increase interest in Science, Technology, Engineering and Math (STEM)
- 2 Increase STEM understanding
- 3 Ready students for a career in STEM
- 4 Increase workforce skills
- 5 Build life values

The annual operating budget for HFR is \$80,000 with plans to expand HFLL, HFLLJr and FTC programs to the elementary and middle schools on the neighbor islands.

Hawaii State Science Olympiad (HSSO)

Since 2004, the Hawai'i State Science Olympiad (www.hssso.org), a federally recognized 501(c) (3) non-profit organization, has been dedicated to improving the quality of K-12 science education in Hawai'i. The National Science Teachers' Association, the National Governor's Association and the past four U.S. Presidents have cited the Science Olympiad organization as a model program to spark student interest in science, technology, engineering and mathematics (STEM) and provide to support learning and discovery for students of various gifts and talents. To date, Hawaii's own HSSO has provided exciting opportunities in STEM exploration to over 25,000 students statewide. At its core, the Science Olympiad program is about creating life shaping/changing opportunities for students. Through our program, a diverse body of students is able to participate in a wide range of science-based activities that meet Common Core, Hawai'i State and National Science standards.

Hawai'i State Science Olympiad



As part of the national Science Olympiad system, HSSO provides a tournament-based program for K-12 students across all islands of Hawai'i. Each year, we organize over one dozen tournaments across the state encompassing 18 tournament events and provide the rules and educational materials for each event to teacher-coaches from participating schools. In 2015, 84 schools and other organizations, and over 2,200 students, participated in our tournaments. The tournament events cover a wide range of topics including, but not limited to, astronomy, biology, chemistry, ecology, engineering, forensics, geology, medicine, physics, robotics, technology and zoology. Science Olympiad events engage students



in hands-on, problem-based activities designed to challenge as well as excite. These events are real science including inquiry-based experiments that allow even our youngest student to experience the fun and excitement of making new discoveries.

The HSSO community has grown steadily since its inception. Last year, over 1,500 students from 84 teams from every island in the State participated in six regional tournaments for high school (C Division) and middle school students (B Division), five to seven elementary school (A Division) tournaments, and our final tournament. Winners in the B and C Division are then offered the opportunity to represent Hawaii at the National Science Olympiad tournament held in July. Even with this success, there are many students who are not exposed to our program. HSSO State Directors continually engage with Department of Education staff, school administrators and teachers to further grow the program within our state, especially for Title I schools in some of Hawaii's most disadvantaged communities.

The Hawai'i State Science Olympiad budget for operating budget is \$47,000. HSSO receives all its funding through the generosity of partner corporations (historically 50%), community foundations (13%), team registration fees (28%) and individual donations (9%, approximately half of which come from HSSO officers and board members)

Science Bowl

The Hawai'i Science Bowl (HSB) was founded in 1994 and is the only qualifying competition in Hawaii that is recognized by the U.S. Department of Energy for the National Science Bowl, which is held annually in Washington D.C. HSB is a fast paced Jeopardy style competition between high school teams statewide. Teams are given questions on a variety of STEM (Science Technology Engineering Math) related topics, which test both their knowledge of STEM and their competitive skills in responding quickly, correctly and strategically before the other competing team answers the question.



The mission of the Hawaii Science Bowl is to elevate participating high school students' mastery of STEM disciplines by providing a highly competitive event that requires going far beyond standard school requirements. The competition provides students with the skills necessary to assist them in Hawaii's emerging knowledge-based economy and is a catalyst to mastering core STEM subjects. Successful teams spend countless hours outside of their regular high school classes to prepare for the competition.

The Hawaii Science Bowl competition features 20 teams, 100 students, 20 coaches, and over 100 volunteers. Over the last 25 years, 54 Hawaii high schools across the state and over 2,400 Hawaii students and their advisors have participated in the competition and approximately 120 students have represented Hawaii on the national stage. Past participants have become engineers, scientists and lawyers.

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Operations and Budget



The Hawaii Science Bowl (HSB) started in 1994 and is managed by the HSB Executive Committee. The HSB Executive Committee is currently made up of volunteers from the private sector, Honolulu Community College, Hawaii Department of Education, United States Coast Guard and Hawaii Alpha Delta Kappa (an educational sorority). The Executive Committee coordinates the event; including recruiting teams and volunteers, managing the round-robin competition, arranging transportation for neighbor

island teams, printing t-shirts and, providing lunch for the teams and volunteers.

The annual budget for the competition is approximately \$18,000 (approximately 60% is funded by corporate sponsors). It has been a long-term goal to expand the HSB to the middle schools and an additional \$20,000 would make this achievable.

VEX Robotics

VEX VRC and VEX IQ robotics (<http://www.vexrobotics.com/vexiq>) are currently the fastest growing elementary and secondary scholastic robotics programs in Hawaii and throughout the world. In just six years, the VEX IQ program in Hawaii for elementary and middle school students increased from 42 teams to 270 teams; the VEX EDR program has currently 95 teams. The teams represent public, public charter, private, homeschools along with teams affiliated with Boys and Girl Scouts on Oahu, Maui, Molokai, Kauai, Lanai and the Big Island.

Robotics is the branch of mechanical engineering, electrical engineering and computer science that deals with the design, construction, operation, and application of robots, as well as computer systems for their control, sensory feedback, and information processing. Robotics is increasingly being considered as the fourth "R" of learning, "Reading, wRiting and aRithmetic" that modern-day students must understand to succeed in a highly competitive, technology-driven world. Robotics integrates all STEM fields in way no other subject can cover. Robotics is the mother of all subjects. It integrates mechanical, electrical, electronics, control engineering, computer science, technology, math and science and:



- Makes learning fun, engaging, and inspiring
- Provides highly practical hands-on experience
- Gives a head-start in preparing for high school and college
- Develops critical thinking skills and problem solving strategies
- Enables learner to develop and express creativity
- Develops the ability to work collaboratively in teams
- Helps students develop an intuitive understanding of physical concepts in science and math
- Helps to excel in math and science and choose a career in science and technology
- Enables learner to appreciate and realize technology
- Builds confidence and self-esteem
- Prepares student for the fast-paced competitive world

2019-2020: Goals:

1. Program expansion/increase access: VEX IQ (elementary/middle), VEX VRC (middle/high) (kits, field, accessories)
2. Program replenishment/upgrades (game and field sets, parts)
3. Support 3 VEX VRC and IQ state championships and one Signature event (trophies/banners/volunteer T shirts)

The following table highlights the number of students, schools and volunteers that the Hawaii STEM Coalition supports statewide:

HAWAII STEM COALITION 2018 Statewide Statistics						
	FFA	HRF	HSSO	HAS	Science Bowl	VEX Robotics
Students at School Level	400	1,210	1,620	6,079	100	3,000
Students at District/Regional	200	882	1,620	1,347	100	2,000
Students at State Level	80	815	480	410	100	600
Students at National/Intl	8	44	30	25	5	150
Participating Schools	18	94	108	180	14	170
Volunteers	50	858	200	400	120	2,100

A detailed description of the goals, objectives and tasks are reflected in the table on the following pages:

GOAL #1: To create a unified initiative of volunteer-based Hawaii STEM organizations to allow expansion of programs by leveraging shared resources, called the *Hawaii STEM Coalition*

OBJECTIVE	TASK	RESPONSIBLE PARTY	MONTH
Objective 1a: Begin expansion of coalition programs	Identify schools, islands and underserved areas that are currently not participating in the Hawaii STEM Coalition programs	Hawaii STEM Coalition	July
Objective 2a: Assist areas of interest and need	Provide resources to jump-start programs in schools and areas that are underserved	Hawaii STEM Coalition	July-Sept
Objective 3a: Organize the STEM Coalition organizations to communicate to the public	Create an online Hawaii STEM Coalition site with a compendium of events, timelines, and registration links	Hawaii STEM Coalition and Coalition Coordinator	July
Objective 4a: Coordinate efforts among the coalition programs	Utilize the database to identify gaps in STEM coverage and work together to fill these gaps	Coalition Coordinator	July-Dec
Objective 5a: Recruit more STEM organizations to join the coalition	Invite other STEM organizations to join the Coalition and add their resources and information	Hawaii STEM Coalition	July-June
Objective 6a: Evaluate expansion data	Review data, participant numbers, and budget to guide the future expansion of STEM services	Coalition Coordinator and Outside Evaluator	May-June

GOAL #2: To gather Statewide data from existing STEM organizations to track student involvement from K-12, Post-Secondary and career placement within STEM fields that can be used in targeting the needs within Hawaii's workforce development.

OBJECTIVE	TASK	RESPONSIBLE PARTY	MONTH
Objective 1b: Begin a retrospective pilot study of the impact of STEM programs on Hawaii's future workforce	Hire the Hawaii STEM Coalition Coordinator as an Independent Contractor	Hawaii STEM Coalition	July
Objective 2b: Create and disseminate surveys among the coalition	Survey STEM volunteers, mentors, parents, and members of Hawaii's STEM workforce on their past involvement as a student participant in any of the Coalition tournaments, college/major selection, career pathways and geographic locations	Hawaii STEM Coalition and Coalition Coordinator	July-Oct
Objective 3b: Analyze the survey data	Assess if student participation in Coalition activities have a direct correlation with their career choices and decision to return to Hawaii to join the STEM workforce.	Coalition Coordinator	November
Objective 4b: In parallel, collect an inventory of current programs, resources and historical outcomes to be used for a longitudinal study to track a cohort of students within each organization of the coalition.	Senior students from all Coalition events will be asked to participate in a prospective, longitudinal study. Personal contact information will be collected as well as information about their college choice, potential college major, and career goals. Students will be contacted 2-, 5-, and 10-years after high school and asked about their college major, postgraduate education, career positions, and geographic location.	Hawaii STEM Coalition and Coalition Coordinator	July, December, April, June
Objective 5b: Evaluation of the retrospective study.	Numbers from the longitudinal study will be collected over the course of 10 years for each cohort, and statistics will be conducted to determine the impact of STEM programs on Hawaii's STEM workforce.	STEM Coalition	May-June

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

Annual Quarterly Timeline

Quarter	Results and Outcomes	Objective
1 st QTR	Expand STEM Coalition programs with an emphasis on middle schools, neighbor islands and underserved areas.	1a, 2a
	Develop a STEM Coalition website	3a
	Collect, create and organize volunteer information in a shared database	3a, 4a
	Hire a Coalition Coordinator	1b
	Create questionnaire that will be distributed to volunteers	2b
2 nd QTR	Contact current and past STEM volunteers and request them to complete the brief survey about their high school and competition in any STEM organization event, academic history, career history, and current career position.	2b
	Continue contacting STEM volunteers until we have obtained data on a significant population size ($n \geq 100$).	2b
	Data will be organized and statistics will be conducted	3b
	Collect, create and organize former student participant information from the past 5 years in a shared database	3a
	Create questionnaire that will be distributed to former student participants.	4b
3 rd QTR	Collect basic information from Senior student awardees during the 2020 school-year competitions (population size of $n \geq 25$). This will serve as one cohort. Each year will be another cohort, and data collected will be a baseline. Create a database with calendar reminders to contact these students 2, 5, and 10 years post-high school graduation. Students will be sent a survey about their academic journey, employment history, and career goals at each time-point. A new cohort will be established every year, with data collected and analyzed every year a cohort has a time-point. In addition, former Hawaii STEM students who graduated 2 and 5 years ago (2016, 2013) will be contacted and asked to complete the 2 or 5-year questionnaire about their academic journey and career history.	4b
4 th QTR	Basic information collected at the beginning of the study will be compared with the information collected at designated time-points to evaluate whether students continued their STEM education and pursued careers in STEM-related fields.	3b
	The STEM Coalition Coordinator will provide quarterly reports to the Hawaii STEM Coalition and the State Legislature	5b

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

Each objective will be closely monitored by the Hawaii STEM Coalition Executive Committee to ensure tasks and deliverables stay on schedule. The Committee will meet on a monthly basis to review the detailed tasks. The project results will be sent to available faculty and staff at the Hawaii Department of Education and the University of Hawaii at Manoa (STEM Program office, College of Engineering, College of Tropical Agriculture and Human Resources) for feedback

3. List the measure(s) of effectiveness that will be reported to the State agency through which grant funds are appropriated (the expending agency). The measure(s) will provide a standard and objective way for the State to assess the program's achievement or accomplishment. Please note that if the level of appropriation differs from the amount included in this application that the measure(s) of effectiveness will need to be updated and transmitted to the expending agency.

The following measures of effectiveness and accomplishments will be reported to the expending agency and shall include:

- Number of student participants in all STEM programs within the Coalition (should new organizations join, data will be collected accordingly)
- Number of schools participating in all STEM programs within the Coalition
- Number of professionals that participated in STEM programs as students
- Number of professionals that pursued STEM related majors in college
- Type of majors and location of studies
- Career choices and data showing direct correlation between STEM programs and job placement
- Number if applicable of students, schools and islands participating in STEM programs as a result of the STEM expansion plan

III. **Financial**

Budget

1. 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 ([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](#))

BUDGET REQUEST BY SOURCE OF FUNDS

Period: July 1, 2019 to June 30, 2020

Applicant: Hawaii Academy of Science

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				
2. Payroll Taxes & Assessments				
3. Fringe Benefits				
TOTAL PERSONNEL COST				
B. OTHER CURRENT EXPENSES				
1. Airfare, Inter-Island				
2. Insurance				
3. Lease/Rental of Equipment				
4. Lease/Rental of Space				
5. Staff Training				
6. Supplies				
7. Telecommunication				
8. Utilities				
9 Subcontractors	205,000			
10 Independent Contractor	30,000			
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
TOTAL OTHER CURRENT EXPENSES	235,000			
C. EQUIPMENT PURCHASES				
D. MOTOR VEHICLE PURCHASES				
E. CAPITAL				
TOTAL (A+B+C+D+E)	235,000			
SOURCES OF FUNDING		Budget Prepared By:		
(a) Total State Funds Requested	235,000	Amy Weintraub 808-956-7930		
(b) Total Federal Funds Requested		Name (Please type or print) Phone		
(c) Total County Funds Requested		<i>Neal Atebara</i>		
(d) Total Private/Other Funds Requested		Signature of Authorized Official Date		
TOTAL BUDGET		Neal Atebara, MD, Vice Chair		
		Name and Title (Please type or print)		

BUDGET JUSTIFICATION - EQUIPMENT AND MOTOR VEHICLES

Period: July 1, 2019 to June 30, 2020

Applicant: Hawaii Academy of Science

DESCRIPTION EQUIPMENT	NO. OF ITEMS	COST PER ITEM	TOTAL COST	TOTAL BUDGETED
Not Applicable			\$ -	
			\$ -	
			\$ -	
			\$ -	
			\$ -	
TOTAL:				

JUSTIFICATION/COMMENTS:

DESCRIPTION OF MOTOR VEHICLE	NO. OF VEHICLES	COST PER VEHICLE	TOTAL COST	TOTAL BUDGETED
Not Applicable			\$ -	
			\$ -	
			\$ -	
			\$ -	
			\$ -	
TOTAL:				

JUSTIFICATION/COMMENTS:

BUDGET JUSTIFICATION - CAPITAL PROJECT DETAILS

Period: July 1, 2019 to June 30, 2020

Applicant: Hawaii Academy of Science

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	N/A					
LAND ACQUISITION	N/A					
DESIGN	N/A					
CONSTRUCTION	N/A					
EQUIPMENT	N/A					
TOTAL:						
JUSTIFICATION/COMMENTS:						

GOVERNMENT CONTRACTS, GRANTS, AND / OR GRANTS IN AID

Applicant: Hawaii Academy of Science

Contracts Total: -

	CONTRACT DESCRIPTION	EFFECTIVE DATES	AGENCY	GOVERNMENT ENTITY (U.S. / State / Haw / Hon / Kau / Mau)	CONTRACT VALUE
1	N/A				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

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
\$72,500	\$105,000	\$50,000	\$7,500	\$235,000

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

The Hawaii STEM Coalition will focus on opportunities for expansion and data collection from private foundations, industry, and non-Hawaii government sources, including:

Federal STEM grants
Hawaii Community Foundation
National Science Foundation
Bank of Hawaii Foundation
Central Pacific Bank Foundation
Hawaii STEM industries

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.

Not Applicable

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.

None of the STEM organizations that would receive funds from this proposed grant have received federal, state, or county government contracts, grants, or grants in aid within the prior three years. The Hawaii Academy of Science, as a pro-bono service to the STEM community, will help administer this grant but will not receive any funds from this grant.

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

0/Not Applicable

IV. **Experience and Capability**

1. **Necessary Skills and Experience**

The applicant shall demonstrate that it has the necessary skills, abilities, knowledge of, and experience relating to the request. State your experience and appropriateness for providing the service proposed in this application. The applicant shall also provide a listing of verifiable experience of related projects or contracts for the most recent three years that are pertinent to the request.

As community and event organizers with paid staff, HAS will assist the coalition with resources that will cut time and costs for each member (IN-KIND). The HAS office will also provide administrative oversight and work with members to sustain and secure funding to increase capacity and build current infrastructures by streamlining resources and identifying priorities to meet their financial goals. The HAS Board will also assist as needed on a pro-bono consultant basis.

2. **Facilities**

The applicant shall provide a description of its facilities and demonstrate its adequacy in relation to the request. If facilities are not presently available, describe plans to secure facilities.

HAS will provide facilities to the Coalition on a pro-bono basis as a service to the STEM community. HAS is extremely fortunate to be generously sponsored by the University of Hawaii at Manoa, College of Education for nearly two decades. The office is located in the College of Education portables as a fully furnished office that can accommodate four staff members. Phone, Hawaii.edu emails, internet, copying machines and access to the University of Hawaii network are readily available to assist the Coalition members.

V. **Personnel: Project Organization and Staffing**

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

The applicant shall describe the proposed staffing pattern and proposed service capacity appropriate for the viability of the request. The applicant shall provide the qualifications and experience of personnel for the request and shall describe its ability to supervise, train and provide administrative direction relative to the request.

Hawaii STEM Coalition Executive Committee will oversee that the deliverables are met for each task as described in the proposal. The committee consists of the executive leaders from each STEM organization and will meet monthly.

Program Coordinator will be the liaison between the STEM coalition members and will oversee the feasibility study. The position will require a background in education, evaluation methodologies, program management and strong organizational skills. The committee has a list of applicants to reach out to if funded.

Dr. Courtney Chang from the Hawaii Academy of Science will work closely with the coordinator to ensure the study is carried out in a timely manner (IN-KIND). Dr. Chang has experience in grants management and is a former higher education instructor at Kapiolani Community College's STEM program.

2. Organization Chart

The applicant shall illustrate the position of each staff and line of responsibility/supervision. If the request is part of a large, multi-purpose organization, include an organization chart that illustrates the placement of this request.

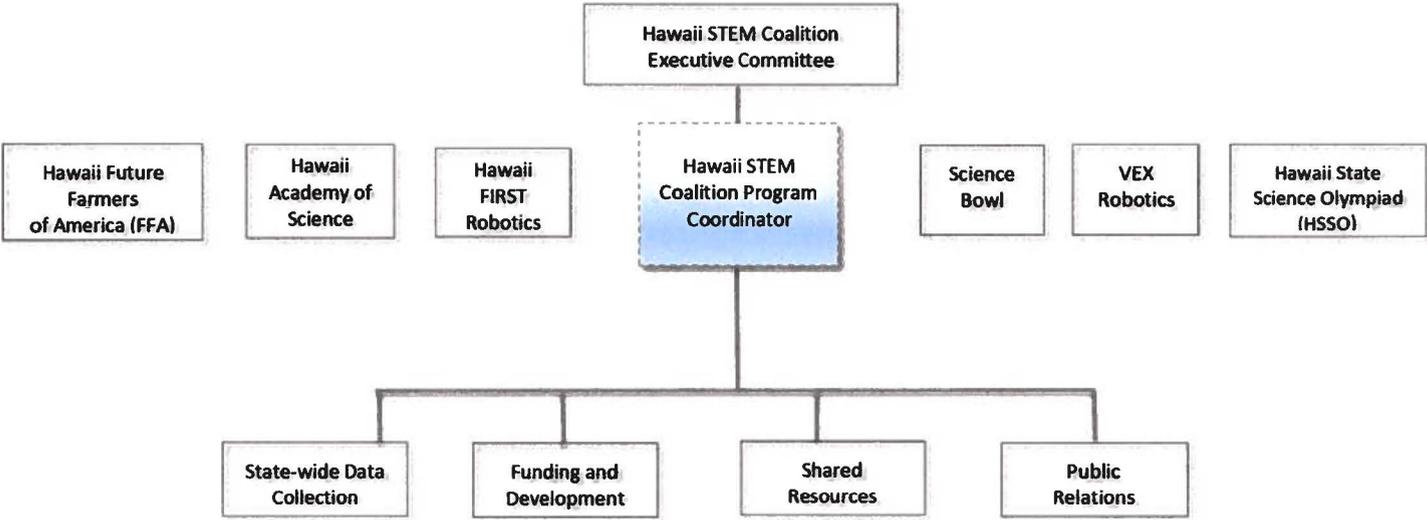
SEE FOLLOWING PAGE

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.

Program Coordinator: \$30,000

**ORGANIZATIONAL CHART
Hawaii STEM Coalition**



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.

Not Applicable

2. **Licensure or Accreditation**

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

Not Applicable

3. **Private Educational Institutions**

The applicant shall specify whether the grant will be used to support or benefit a sectarian or non-sectarian private educational institution. Please see [Article X, Section 1, of the State Constitution](#) for the relevance of this question.

Not Applicable

4. **Future Sustainability Plan**

The applicant shall provide a plan for sustaining the activity funded by the grant after fiscal year 2019-20.

The Hawaii STEM Coalition will actively meet and develop a strategic plan to help streamline efforts and shift into a more diversified funding plan. Traditionally funded by grants, private foundations and corporate sponsorships (which we will continue to seek and also take to the research level) the plan will look at collaborating and integrating into existing education and workforce development programs as a result of the pilot project proposed here.

If successful, the Hawaii STEM Coalition will look at the option of becoming an incorporated entity.