

HAWAII ACADEMY OF SCIENCE
1776 University Avenue, UA4-4
Honolulu, HI 96822

January 30, 2015

State Capitol, Room 306
Honolulu, HI 96813
Attn: GIA

Enclosed is the original copy of a Grant-in-Aid proposal to support the
Hawaii State Science and Engineering Fair.

Mahalo,



Scott Robinson
Principal Investigator
Hawaii Academy of Science

House District 23
Senate District 11

THE TWENTY-EIGHTH LEGISLATURE
APPLICATION FOR GRANTS
CHAPTER 42F, HAWAII REVISED STATUTES

Log No:

For Legislature's Use Only

Type of Grant Request:

GRANT REQUEST - OPERATING

GRANT REQUEST - CAPITAL

"Grant" means an award of state funds by the legislature, by an appropriation to a specified recipient, to support the activities of the recipient and permit the community to benefit from those activities.

"Recipient" means any organization or person receiving a grant.

STATE DEPARTMENT OR AGENCY RELATED TO THIS REQUEST (LEAVE BLANK IF UNKNOWN):

STATE PROGRAM I.D. NO. (LEAVE BLANK IF UNKNOWN):

1. APPLICANT INFORMATION:

Legal Name of Requesting Organization or Individual:
Hawaii Academy of Science
Dba: Hawaii Academy of Science
Street Address: 1776 University Avenue UA4-4
Honolulu, HI 96822
Mailing Address:
same

2. CONTACT PERSON FOR MATTERS INVOLVING THIS APPLICATION:

Name Scott Robinson
Title Principal Investigator
Phone # 341-0265
Fax # 956-5183
E-mail scottdr@hawaii.edu

3. TYPE OF BUSINESS ENTITY:

- NON PROFIT CORPORATION INCORPORATED IN HAWAII
 FOR PROFIT CORPORATION INCORPORATED IN HAWAII
 LIMITED LIABILITY COMPANY
 OTHER
 SOLE PROPRIETORSHIP/INDIVIDUAL

6. DESCRIPTIVE TITLE OF APPLICANT'S REQUEST:

Hawaii State Science & Engineering Fair

4. FEDERAL TAX ID #:

5. STATE TAX ID #:

7. AMOUNT OF STATE FUNDS REQUESTED:

FISCAL YEAR 2016: \$ \$85,700

8. STATUS OF SERVICE DESCRIBED IN THIS REQUEST:

- NEW SERVICE (PRESENTLY DOES NOT EXIST)
 EXISTING SERVICE (PRESENTLY IN OPERATION)

SPECIFY THE AMOUNT BY SOURCES OF FUNDS AVAILABLE
AT THE TIME OF THIS REQUEST:

STATE \$ _____
FEDERAL \$ 30,000
COUNTY \$ _____
PRIVATE/OTHER \$ 100,000

TYPE NAME & TITLE OF AUTHORIZED REPRESENTATIVE:

AUTHORIZED SIGNATURE

Scott Robinson, Principal Investigator

NAME & TITLE

1/30/15

DATE SIGNED



RECEIVED

1/29/2015
11:21 AM

Application for Grants and Subsidies

I. Background and Summary

This section shall clearly and concisely summarize and highlight the contents of the request in such a way as to provide the State Legislature with a broad understanding of the request. Include the following:

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

Founded in 1925, The Hawaii Academy of Science (HAS) is a 501(c)(3) non-profit membership organization whose mission is to improve the quality of life of the people of Hawaii and the global community through the discovery of new knowledge and the intelligent application of this knowledge to the problems confronting human society. To this end the Academy sponsors scientific programs for both adults and youth in Hawaii. While the membership is comprised primarily of professional scientists, anyone interested in the goals of the Academy are welcome to join the organization. The HAS is the state affiliate of the National Academies of Science (NAS) and the American Association for the Advancement of Science (AAAS), the world's largest general scientific society.

The Hawaii Academy of Science has conducted the **Hawaii State Science & Engineering Fair (HSSEF)** each year since 1958. A science fair is a competition in which middle and high school students conduct scientific experiments and present their findings on a display board that explains the experiment and its outcomes. The entire science fair process takes almost a year to complete. Winners from school science fairs advance to the district science fairs; the winners from the district fairs advance to the Hawaii State Science & Engineering Fair (HSSEF); and the winners from the HSSEF advance to the International Science & Engineering Fair (ISEF) on the mainland.

The Academy also sponsors the **Pacific Symposium for Science and Sustainability (PS3)** which is similar to the Science Fair with one major difference: instead of preparing a display board to explain the research, students make oral presentations to explain their research. Winners from the Pacific Symposium advance to the Junior Symposium for Science and Humanities held on the mainland each year.

And finally, the HAS presents a professional agenda that includes the **Science Cafe** at which a scientist presents current and often controversial topics to a group of interested citizens in a local restaurant.

2. The goals and objectives related to the request.

The term "goal" is usually defined to be a vague, long-term ideal, and an "objective" is defined to be a short-term, more specific outcome.

GOAL: The goal is increase the number of students in Hawaii pursuing college degrees in STEM related fields of study, thereby contributing to a more scientifically literate workforce for Hawaii, the nation, and the international community.

OBJECTIVE A: To inform all secondary science teachers of the opportunities the Science Fair offers their students, regardless of their geographic location or island of residence.

OBJECTIVE B: To provide financial support to the eight districts science fairs in Hawaii.

OBJECTIVE C: To provide students with an opportunity to conduct in-depth and comprehensive science investigations that extend beyond what is possible during the regular school day.

OBJECTIVE D: To provide the opportunity for students and teachers to interact with scientists in Hawaii;

OBJECTIVE E: To encourage, recognize, and reward students who demonstrate excellence in scientific research.

3. The public purpose and need to be served.

When the National Science Fair (now the International Science & Engineering Fair) was established in 1950, its stated purpose was to increase the number of students who enrolled in science degree programs in college. That purpose has not changed: the public purpose to be served in conducting the Science Fair is still the recruitment of more pre-college students who will pursue science, technology, engineering, and math fields in college. Another way of stating this is to say that our goal is to help produce a more scientifically literate workforce for Hawaii, the nation, and the world.

This 65-year old goal is consistent with more recent national concerns to increase STEM education. The acronym STEM stands for Science, Technology, Engineering, and Mathematics. The STEM fields are those academic and professional disciplines that fall under the umbrella areas represented by the acronym. According to both the United States National Research Council and the National Science Foundation, the fields are collectively considered core technological foundations of an advanced society. The strength of the STEM workforce is viewed as an indicator of a nation's ability to sustain itself. The HAS is proud to have contributed to this goal every year since the first Hawaii State Science & Engineering Fair in 1958.

4. Describe the target population to be served.

The target population is all secondary students in Hawaii, regardless of where they reside or to which school they attend. Students who are home schooled are also encouraged to participate. Both the Science Fair and the Symposium are extra-curricular programs that

extend beyond the school day and the school curriculum. Each year approximately 8,000 students in Hawaii participate in these programs.

5. Describe the geographic coverage.

Both the Science Fair and Symposium programs serve the entire State of Hawaii. Students on all islands are encouraged to participate, and normally students from all islands do participate. Students from American Samoa and Micronesia also attend the Symposium, but at their own expense.

II. Service Summary and Outcomes

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

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. The applicant shall:

The science fair program in Hawaii is a yearlong experience that includes the following key events: schools are informed of the calendar of events for the year; students select a topic and conduct their research; the school science fairs are held, and the better projects advance to the district science fairs; the district science fairs are held and the better projects advance to the state science fairs; and finally, the HSSEF is held and the best projects from each district fair and the HSSEF advance to the Intel® International Science & Engineering Fair on the mainland. There are hundreds of tasks that need to be performed behind the scenes to make these events happen.

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

PHASE 1: PREPARATIONS (July – September). This period of time is devoted to laying the groundwork for the coming series of science fairs. The staff begins by communicating with all players, including ISEF, students, schools, teachers, donors, judges, and districts. Printed materials are sent to teachers; the district and state science fairs sign affiliation agreements with ISEF; workshops are held for teachers and participants; websites, brochures, and booklets are updated; advance airline and hotels bookings are made for the ISEF trip in May; and new proposals for funding are written. Students begin their research projects at this time. Consultants are hired to set up and operate the 4D Database that houses all data for the HSSEF – project and participant information, Special Award presenters, and additional school and district information.

PHASE 2: AWARDS AND FUND-RAISING (October - December). The tasks from Phase I continue as needed during this time. Requests for funding for the following year are sent to previous donors, and new proposals are written to solicit new donors. Communication to schools and teachers continue, and materials (certificates and pins) are

prepared for the state science fair. Financial and logistical assistance is provided to school and district fairs.

PHASE 3: SCHOOL & DISTRICT SCIENCE FAIRS (January - March). The School and District Science Fairs are held during these months. The data for the winners at the school fairs are forwarded to the district fair directors and logistical support is provided to the district fairs as needed. The district science fairs are held and the data of the winners are forwarded to the State Fair relational database. Final preparations are made for the HSSEF. Judges, awarding agencies, and volunteers are confirmed, committees are organized, programs are published, and final arrangements are made with the Hawaii Convention Center.

PHASE 4: HSSEF and ISEF (April - June). The work of the HSSEF is done by committees, including Communications and Publicity, Facilities, Volunteers, Website/Database Operations, On-site Registration, Exhibits, Scientific Review of Projects, Safety and Security, Opening Ceremony, Celebrity Judges, Judging, Food and Hospitality, Public Visitations, Awards Ceremony, and the CHEVRON Poster Contest. The Science Fair Director monitors the work of each committee. After the HSSEF, the students who have won trips to ISEF are registered and final air and hotel reservations are made. The Hawaii delegation of about 20 students and their adult chaperones then attend the Intel@ISEF experience in Pittsburgh, Pennsylvania, May 10-15, 2015. Final evaluation reports are completed when the staff returns to the islands.

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

We list here the one major goal and five objectives listed in Section I above. For each we indicate how the goal or objective will be evaluated.

We divide our program operations into the four overlapping timeframes listed in the previous section. To illustrate the process we use to evaluate our program, we have included the following table that contains one objective from each phase of our program:

Phase: Program Activity	Process Measures	Assessed by
Phase 1: In-service workshops for teachers	Number of teachers attending workshops	Percentage of attendees who join the science fair
Phase 2: Student awards	Dollar value of awards set as a target goal	Dollar amount raised
Phase 3: Number of participants	Target number of statewide science fair participants	Number of science fair participants
Phase 4: Judge recruitment	Number of judges needed to evaluate science fair projects	Number of judges at the HSSEF
GOAL: To increase number of students who will major in Science	Survey given to all science fair students at HSSEF	Percentage of students who intend to major in Science

After the International Science & Engineering Fair in May, the committee chairs and the Science Fair staff will use the data to assess each program activity. If weaknesses are identified, strategies will be made for improvements.

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

Five objectives and one manor goal have been identified. Data for the following measures of effectiveness will be reported to the State Agency.

GOAL: To increase the number of students in Hawaii pursuing college degrees in science related fields of study.

PROCEDURE: Students will complete a survey during the judging session. They will be asked to indicate what they intend to major in at the college level.

MEASURE OF EFFECTIVENESS: The percentage of students indicating they intend to major in STEM-related college programs.

OBJECTIVE A: To inform all secondary science teachers of the opportunities the Science Fair offers their students, regardless of their geographic location or island of residence.

PROCEDURE: Examine mailing and emails that were sent to verify that all information was sent to every secondary school in Hawaii.

MEASURE OF EFFECTIVENESS: the percentage of schools receiving notification.

OBJECTIVE B: To provide financial assistance to the neighbor islands science fairs to enable their students to more fully participate in the Science Fair.

PROCEDURE: Determine the amount of money needed and collected from donors and sponsors to the neighbor island district science fairs and through this grant, the Academy will be able to support districts.

MEASURE OF EFFECTIVENESS: The number of district science fairs conducted and the number of district students attending the HSSEF in Honolulu.

OBJECTIVE C: To provide students with an opportunity to conduct in-depth and comprehensive science investigations that go beyond what is possible during the regular school day.

PROCEDURE: Students will complete a survey as part of the registration process on which they will be asked how much time they devoted to their projects and if it extended beyond the school day.

MEASURE OF EFFECTIVENESS: The percentage of students who worked on their projects beyond the school day.

OBJECTIVE D: To provide an opportunity for students to interact with scientists in Hawaii.

PROCEDURE: Each judge who interviews a student signs a sheet attached to the student's project.

MEASURE OF EFFECTIVENESS: The percentage of students who were interviewed

by at least three (3) scientists.

OBJECTIVE E: To encourage, recognize, and reward students who demonstrate excellence in scientific research.

PROCEDURE: The number of students receiving an award and the total dollar amount of all awards will be recorded.

MEASURE OF EFFECTIVENESS: The number of students receiving awards and the total dollar value of awards.

III. Financial

Budget

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

The budget is attached.

- 2. The applicant shall provide its anticipated quarterly funding requests for the fiscal year 2016.**

Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total Grant
\$20,000	\$20,000	\$25,700	\$20,000	\$85,700

- 3. The applicant shall provide a listing of all other sources of funding that they are seeking for fiscal year 2016.**

We intend to seek funding from the following: Ace Hardware; AECOM Technology Corporation; AIO Foundation; Armed Forces Communications; ASME-HI; Bank of Hawaii Foundation; Ben Franklin Crafts; Carrier Hawaii; Chevron; Edward Enterprises; Finance Factors; First Hawaiian Bank Foundation; Hawaii Community Foundation; Hawaii Gas Company; Hawaii Pacific Health; Hawaiian Electric Company; Island Insurance Company; Jeannette and Harry Weinberg Foundation; Jhamandas Watamull Fund; K. Taniguchi, Ltd.; Kiewit Building Group; McInerny Foundation; Monsanto Company; National Oceanic and Atmospheric Administration; Pioneer Hi-Bred; Queen's Medical Center; Referentia Systems; Retina Center of Hawaii LLC; Syngenta Hawaii, LLC; Thirty Meter Telescope; Verizon Foundation; the Yokouchi Foundation; plus many individuals in the community.

- 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.**

None.

IV. Experience and Capability

A. 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.

The Hawaii Academy of Science has conducted the HSSEF and has sent students to the International Science Fair every year since 1958. Working protocols have been developed for every phase of the program. We think this clearly demonstrates that we have *"the necessary skills, abilities, knowledge of, and experience relating to the request."*

B. 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. Also describe how the facilities meet ADA requirements, as applicable.

HSSEF has been held at various venues in Honolulu and presently is housed at the Hawaii Convention Center in Exhibition Hall III on the ground floor. This site provides an excellent venue for this type of event – appropriate space for all projects with enough room to view, excellent lighting for viewing projects, and adequate room for movement of participants and public viewing. This site on the ground floor also makes it possible for use to house the fair, the office and the assembly areas all next to each other.

V. Personnel: Project Organization and Staffing

A. 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.

Due to limited funding, the salaried staff consists of only two part-time employees. **Sara Tamayose** serves two roles: she is the Director of Science Fair and the Program Manager for the Academy. Sara has been with the HSSEF for six years. Prior to that Sara was a teacher with the Hawaii State Department of Education. She also has experience as a technology curriculum integration specialist in Education. **Amy Weintraub** serves as a part-time assistant to Sara.

Eight board members take an active role in the HSSEF. The Chairman of the Board is **Dr. Andrea Fleig, PhD**, Director, Clinical Research, the Queen's Medical Center; Past-Chair is businessman **Wayne Kamitaki**, CEO of Kamitaki, LCC; **Kristen Yamane**, a Corporate Development Planner at The Queen's Health Systems, serves as Treasurer; and **Irv King, PhD**, a retired professor with the College of Education at the University of Hawaii, serves as Secretary. Other board members include **Dr. Neal Atebara, MD**, is Director of the Retina Center of Hawaii at Queens Medical Center; **Ross Murakami** is a partner with KMH LLP; **Justin Mew** is the principal of Kaiser High School; and **Sharlene Tsuda** is a VP of Community Development with Queens Medical Center. **Scott Robinson**, a Science Specialist in the College of Education, will serve as the principal investigator if this grant is funded. Together these dedicated members of the HAS provide the historical perspective, scientific expertise, business skills, and managerial experience that make up a strong management team.

Since we have less than two full-time positions, consultants are hired to create and manage a sophisticated relation database and our webpage. Their services are vital to the success of the Science Fair.

And finally, the science fair would not be possible without legions of volunteers: more than 300 scientists serve as judges at school, district, and the state science fair; scores of teachers guide their students in conducting scientific experiments; hundreds more volunteers help in numerous ways during the school, district, and state science fairs; and dozens of organizations donate funds for student awards and operational expenses. The cooperation of these hundreds of individuals and organizations make the Hawaii State Science & Engineering Fair the premier science education event in Hawaii.

B. Organizational Chart

An organizational chart is attached.

C. Compensation

The applicant shall provide the annual salaries paid by the applicant to the three highest paid officers, directors, or employees of the organization by position.

We have two part-time employees, one at 48% and the other at 70%:

Sara Tamayose	Director	\$35,844.00 (.48 x \$4,675)
<u>Amy Weintraub</u>	<u>Asst. Director</u>	<u>\$42,209.40 (.70 x \$60,299)</u>
TOTAL		\$78,053.40

VI. Other

A. Litigation

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

There are NONE.

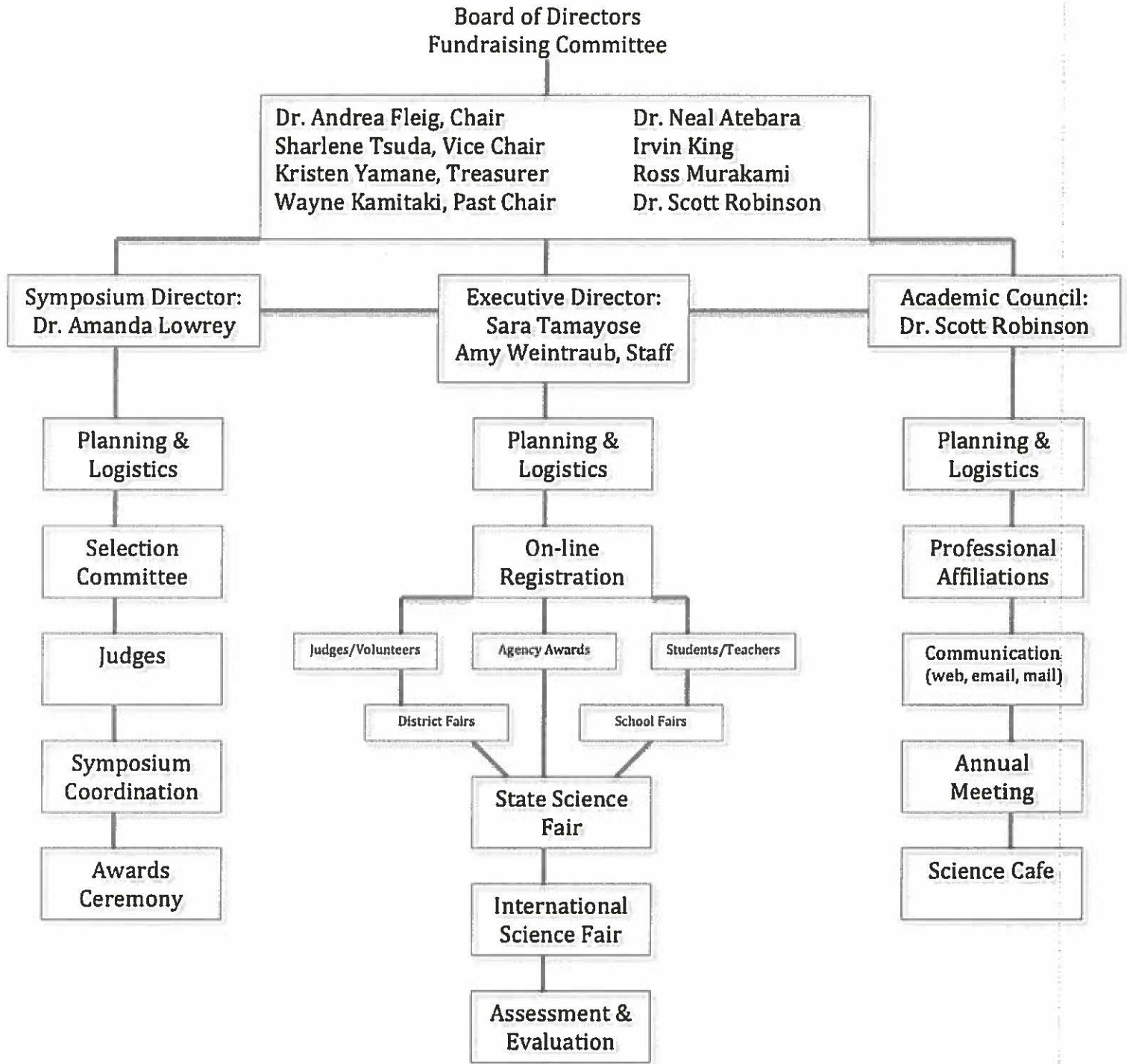
B. Licensure or Accreditation

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

The Society for Science and the Public (SSP) is the licensing agency for the International Science and Engineering Fair (ISEF) and the Hawaii State Science and Engineering Fair (HSSEF). The ACADEMY is the exclusive licensee for the State of Hawaii, and is annually certified by SSP to conduct HSSEF. Since 1958 the Hawaii Academy of Science has been the only licensed organization that can operate the STATE Science Fair in Hawaii. The other district fairs in Hawaii are also "affiliated" with the SSP, but they operate under the general supervision of the HSSEF. All affiliated science fairs must operate under the Intel ISEF Rules and Guidelines and ensure that students and teachers are aware of these requirements as they begin research projects. The ACADEMY assures that all science fairs in Hawaii comply with these requirements.

PROGRAM ORGANIZATIONAL CHART

Hawaii Academy of Science



BUDGET REQUEST BY SOURCE OF FUNDS

(Period: July 1, 2015 to June 30, 2016)

Applicant: Hawaii Academy of Science

BUDGET CATEGORIES	Total State Funds Requested (a)	Federal Grant (b)	Foundations (c)	Donations (d)
A. PERSONNEL COST				
1. Salaries				
2. Payroll Taxes & Assessments				
3. Fringe Benefits (RCUH est. 15%)				
TOTAL PERSONNEL COST				
B. OTHER CURRENT EXPENSES				
Hawaii State Science & Engineering Fair				
1. Insurance				5,000
2. Venue costs(space rental, food, etc.	22,000		9,000	
3. Support for District Science Fairs	9,000		18,000	
4. Workshops (including airfare)	3,000			5,000
5. Supplies, utilities, phone				6,000
6. Contracted support staff	17,000			
7. Technology (Web, database, videos)		50,000		
8. Professional fees for districts & state	9,000			2,000
9. Student Awards			14,000	
10. Ground transportation to State Fair			4,000	
10. Operational expenses			10,500	
International Science & Engineering Fair				
1. Travel costs (mainland)	15,000		7,500	
2. Food & Lodging	5,000			
3. Supplies for student projects	200			
4. Registration fees	5,000			
5. Duplication/printing	500			
6. Support staff				
TOTAL OTHER CURRENT EXPENSES	85,700	50,000	63,000	18,000
C. EQUIPMENT PURCHASES				
D. MOTOR VEHICLE PURCHASES				
E. CAPITAL				
TOTAL (A+B+C+D+E)	85,700	50,000	63,000	18,000
SOURCES OF FUNDING		Budget Prepared By:		
(a) Total State Funds Requested	85,700	Scott Robinson	265-0059	
(b) Federal Grant	50,000	Name (Please type or print)	Phone	
(c) Foundations	63,000	[REDACTED]	01/30/15	
(d) Donations	18,000		Date	
TOTAL BUDGET	216,700	Scott Robinson, Principal Investigator & Board Member		
		Name and Title (Please type or print!)		

GOVERNMENT CONTRACTS AND/OR GRANTS

Applicant: Hawaii Academy of Science

	CONTRACT DESCRIPTION	EFFECTIVE DATES	AGENCY	GOVERNMENT ENTITY (U.S. / State / Haw / Hon / Kau / Mau)	CONTRACT VALUE
1.	For technology support for the Science Fair	2011-2016	NOAA	United States	\$50,000/yr
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
				TOTAL	\$250,000

**DECLARATION STATEMENT OF
APPLICANTS FOR GRANTS PURSUANT TO
CHAPTER 42F, HAWAII REVISIED 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.

Hawaii Academy of Science

(Typed Name of Individual or Organization)

(Signature)

01/30/15

(Date)

Scott Robinson

Principal Investigator

(Typed Name)

(Title)