

Promoting Science Education and Research in Hawai'i and the Pacific Rim

HAWAI'I ACADEMY OF SCIENCE



Annual Report 2011

Mahalo from Our Outgoing HAS President

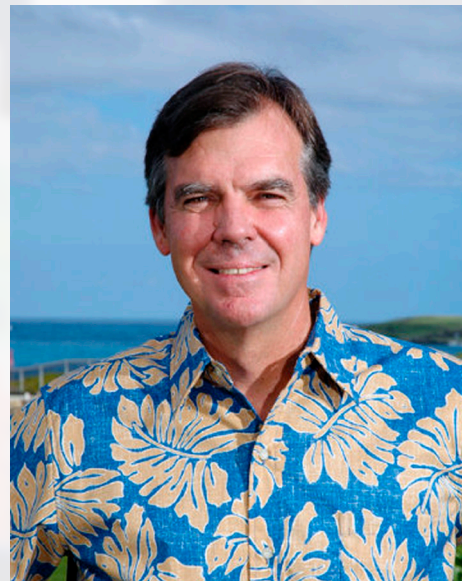
As we conclude the 85th year of the Hawai'i Academy of Science, we reflect on the continued success of our educational programs, the Hawai'i State Science and Engineering Fair and the Pacific Symposium for Science and Sustainability. We are very proud of the accomplishments of our young scholars who represented their families, schools and the State of Hawai'i at both local and national levels. The tremendous accomplishments of these students remind us of the importance and value of our HAS programs and motivate us to be supportive in the years to come.

Over the past year many Academy of Science members and their guests have enjoyed hearing about wide ranging subjects over a glass of wine or coffee at the monthly Science Cafes. The Mahalo Dinner last March was a wonderful opportunity to thank donors and friends, and to recognize excellence in science in Hawai'i. The Hawai'i Academy of Science initiated an annual award to recognize the best and brightest scientist in the state. The 2011 Hawai'i Science Prize was awarded to Dr. Peter Vitousek of Stanford University for his studies of nutrient flux in Hawaiian ecosystems; the first of its kind to a keiki o ka 'aina. It has been a very good year for the Academy and we have had some wonderful events.

We must be cognizant, however, of the significant challenges that the Academy faces in years to come to maintain these activities. The loss of State funding we enjoyed for so many years certainly served as a wakeup call. Many of you stepped up to the plate to lend assistance and provide financial support to keep the Science Fair going. We are certainly indebted to Senator Daniel Inouye and his staff who were instrumental in helping us get a federal stimulus grant to maintain our activities, encouraged us to move and upgrade the venue of the Fair to the Hawai'i Convention Center,

and to restructure our organization to make it sustainable.

A special thanks also goes out to those who have worked so hard as volunteers at the Fair, supported fundraising activities, and helped secure grants and contracts benefitting the Academy and its projects. These efforts have shown the support and goodwill that exists in our community, but it also makes us aware that the Academy must evolve if we expect to survive and sustain ourselves as a viable and healthy organization.



Bruce Anderson
2010–2011 HAS President

Toward this end, the Executive Council and I have proposed changes to the structure of the Academy. While we all appreciate the long history of our organization as an academic society, it is imperative that we make changes that reflect the new requirements that apply to all not-for-profit organizations and that recognize the importance of our educational mission. I would like to acknowledge the contribution of Mr. Keith Matsumoto, our interim (volunteer) Chief Financial Officer, who has been instrumental in shepherding us through the process

of transforming the Academy into a compliant not-for-profit, scientific and educational organization that will be able to sustain itself in the future. I would also like to acknowledge Mr. Jay Fidell and his office for volunteering legal support and expertise in advising us on the best organizational structure to accomplish our mission.

Our first major change was the establishment of a compensated CEO position to manage the activities of the Academy. We have many dedicated members on our council and hard-working staff members, but we have come to the realization that a full-time administrator is needed to manage our operations, to assure that we are compliant with applicable laws and regulations, and to further the mission of the organization. The second major change involves amendments to our bylaws and articles of incorporation to align the Academy with current legal and administrative requirements for non-profit organizations. The amendments redefine governance of the organization to ensure that it is flexible and responsive so that we can adapt to the challenges that all non-profits are facing today. I am fully confident that these changes have been well conceived and are essential to the future of the Hawai'i Academy of Science.

It has been my honor and pleasure to preside over this wonderful organization during the past year. I am proud of all that has been accomplished over the past year and feel strongly that we have established the groundwork necessary to move the Academy forward in the advancement of science education and research in Hawai'i and the Pacific Region. Mahalo to all of you who have helped in this endeavor.

Bruce Anderson
Outgoing President
Hawai'i Academy of Science

A Message From Our Incoming HAS President



Neal Atebara
2011–2012 HAS President

This has certainly been an exciting year for the Hawai‘i Academy of Science! The Pacific Symposium for Science and Sustainability has had another very successful year. Science Cafe continues to be well received as a dialog of scientific discourse. And of course our signature event, the Hawai‘i State Science and Engineering Fair, served 7000 students at the district level and a record 500 students at the state level. These science educational activities have had a profound impact not just on each individual participant but, in a broader context, on our state’s future.

The activities of the Academy run year-round, and as one would expect from the number of students served, they have their share of expenses. The state science fair alone costs upwards of \$300,000 per year. Until just two years ago this was paid for almost entirely by the State of Hawai‘i but, due to our challenging economy, no longer. We currently have enough funds to see us through the 2012 fair in April and part-way to the 2013 fair. Beyond that, we will need to make unprecedented strides in grant-raising in order to survive. As a physician, I would have to classify our health status as critical.

The organizational structure of the Academy has changed little since its inception in 1925. Change and apprehension go hand-in-hand, but if we fail to bring ourselves up to the standards of a modern nonprofit organization, we simply have no hope for financial sustainability. One of the most important changes we have already made has been to appoint Dr. Kerry Kakazu as Academy CEO. We are indeed fortunate to have found a person who not only has the rare set of skills that include federal grant writing, administration, and a strong background in science, but someone committed to save the organization because he himself was a science fair champion in 1974.

But simply hiring a CEO will not be enough. Saving the science fair will also require an all-out effort from the rest of us, the volunteers. We will need to solicit friends and neighbors to help out, assist Kerry in identifying grant opportunities, knock on doors personally to raise funds. It will not be easy.

If we can survive the next few years, however, I foresee an amazingly bright future for the Academy. Our activities are uniquely positioned at the crossroads of educators, scientists, high tech businesses, and the community. We have an 86-year legacy of service to Hawai‘i and tremendous public support. We have the potential to play an active role in helping to shape Hawai‘i’s future in science and technology for another 86 years.

Aloha,

Neal Atebara, MD

President Elect

Hawai‘i Academy of Science



HAWAI‘I ACADEMY OF SCIENCE

Our Mission

Hawai‘i Academy of Science (HAS) is a private, non-profit organization founded in 1925. The mission of HAS is to promote scientific research and education in Hawai‘i and the Pacific Region. The Academy is particularly interested in linking organizations with research, educational, and business interests related to science and technology.

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Past-President	Gareth Wynn-Williams Institute for Astronomy
Secretary	Kerry Kakazu Cancer Research Center of Hawai‘i
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Dept. of Education

Wayne Kamitaki
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College of Education – UH Manoa

Director, Pacific Symposium for Science & Sustainability

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Dept. of Oceanography - UH Manoa

Director, Hawai'i State Science & Engineering Fair

Carolyn Kaichi

HAS Staff

Carolyn Kaichi
Hawai'i Academy of Science
Program Manager & co-Principal Investigator

Jon Asato
Program Management Associate

Sara Tamayose
Program Support

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Bernard Kilonsky
Nancy Kilonsky

Irvin King
Charles Kinoshita
Luke Kirch
Elizabeth Kumabe-Maynard
Will Kyselka
Henry Lau
Edward Laws
Amanda Lowrey
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Lorena Wada
Richard Wainscoat
Susie Wendland-Gardner
Jonathan Whitney
Roy H. Wilkens
Joshua Wise
Alvin J.K. Won
Gareth Wynn-Williams
Klaus Wyrтки
Marian Y.Y. Yong

GOOD LUCK FIN



Wednesday, May 11, 2011, 8:00 A.M.
Judging Day at the International Science & Engineering Fair,
Los Angeles Convention Center.
The Hawai'i delegation arrived early to conduct a haka chant before
entering the exhibit hall for the morning round of interviews.

ANALISTS



The Year in Summary

From a programmatic point of view, this was a year of transition for the Hawai'i Academy of Science and our distinctive Hawai'i State Science & Engineering Fair (HSSEF). While programs like the Pacific Symposium for Science and Sustainability and Science Café have supplemental earmarked funding, the HSSEF is the most costly. This successful program consumes all our resources throughout the year.

For several years the science fair program had been challenged by our goal of reaching sustainability, difficult in the current economic times. Last year's effort took on a different direction, in part supported by stimulus funds (see report by Dr. Kerry Kakazu on page 24) and strategic planning guidance through Senator Inouye's office.

The next fiscal year will be an exciting one with a new system of leadership offering a better environment for stronger educational programs and ultimately for all Hawaii students.

We again extend our Mahalo to the community of donors, volunteers and educators, and especially to Senator Daniel Inouye and his staff who encouraged HAS to reach for excellence in our efforts to accomplish our mission.

HAS Project Reports

Hawai'i State Science & Engineering Fair (HSSEF 2011)

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International Science & Engineering Fair (ISEF 2011)

Pages 10–11

ISEF Student Delegation & HSSEF Teacher Award Profiles

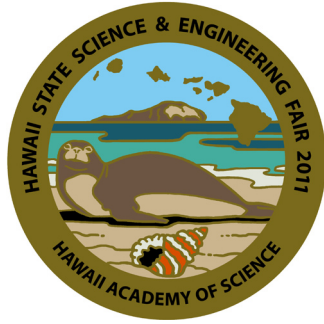
Pages 12–21

Pacific Symposium for Science and Sustainability (PS3)

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Science Café

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Hawai'i State Science & Engineering Fair (HSSEF 2011)

The 2010–11 state science fair year began with an auspicious start, with a generous award of federal funds from the office of then-Governor Lingle in May 2010. After the changeover to the Abercrombie administration, the funds finally made its way to the science fair program through a partnership and contract between the Hawai'i Department of Education (DOE) and the Hawai'i Academy of Science (HAS). Currently HAS and the DOE are in the process of planning a long-term strategy for supporting science, technology, engineering and mathematics (STEM) education in the state.

Above: The 54th Hawai'i State Science & Engineering Fair logo featured on pins and t-shirts given to students.

Below: Hawai'i Governor Neil Abercrombie and then-HAS President Bruce Anderson joined Cellular Bioengineering Inc. CEO Hank Wuh on stage during the HSSEF Opening Ceremony held on March 30, 2010.



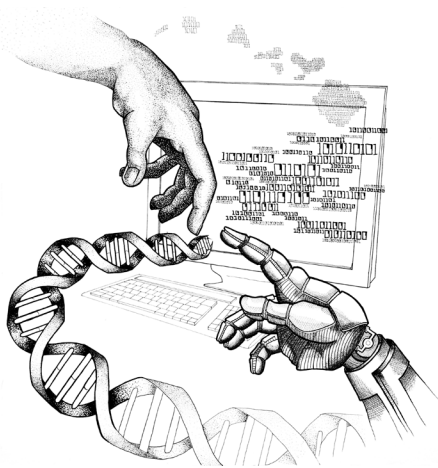
The 54th Hawai'i Science and Engineering Fair (HSSEF) event was held on March 29–30, 2011 at the Hawai'i Convention Center. Approximately 600 students between grades 6–12 participated, representing 77 public, private and home schools around the state. Approximately 20% of the 489 projects entered were from neighbor islands. HAS continues to try to assist districts throughout the state by identifying sponsor sources as well as funding certain expenses for the districts.

All in all, the 54th HSSEF was another success. Over 400 awards were presented to both students and teachers totaling almost \$30,000, not including the costs of sending the top winners and their chaperones to the International Science and Engineering Fair in Los Angeles. Awards range from ribbons and plaques to expense paid trips and scholarships from local colleges and universities. Research projects are eligible for both Academy and Agency awards; while the Academy bestows the official fair awards, individual agencies are allowed to apply their own standards of selection for their winners.

The selection process for the state fair begins early in the school year with projects most often generated in the classroom. Although some students are independent researchers, the majority of projects come to the state fair from an assignment given in the fall by dedicated science educators. These teachers work tirelessly through the year to guide and mentor the students through the long process of formulating an idea into the eventual data gathering and presentation for the school, district and then the state fairs.

Right: Approximately 1,000 students, teachers, parents, and awarding agency representatives attended the 54th HSSEF Awards Ceremony. This is the HSSEF's second year at the Hawai'i Convention Center.

Below: First Place Chevron Poster & Cover Contest winning entry from Von Dickens Ulsa of Farrington High School. His design will decorate the cover of the 2012 HSSEF Program. The theme for this past year's contest was Computer Science.



The Academy judges select the top winners from the state fair after a long day of deliberation, and a number of those students are awarded an expense-paid trip to the International Science and Engineering Fair to compete among the brightest students in the world. Since the Hawai'i Academy of Science is an affiliate of the Society of Science and the Public (SSP), the professional entity that sponsors the international fair, the standards are high. There are also many rules and regulations protecting the safety and consideration of the student researchers and their human or vertebrate subjects.

In addition to the state fair, six of the nine districts in Hawai'i are affiliated with SSP. Kauai, Leeward Oahu, Windward Oahu, East Hawai'i, Maui County and the Hawai'i Association of Independent Schools are affiliated and can send their top winners directly to the International Science and Engineering Fair (ISEF) without having to qualify at the state, although the winners still participate at the state level to gain additional recognition and experience. The three remaining districts, West Hawai'i, Central Oahu and Honolulu, are still pending affiliation status, but are able to compete for ISEF at the state fair. (Note: Central Oahu has since been awarded affiliation and will compete in the 2012 ISEF; and Honolulu District is in the process of qualifying for affiliation as well.)

As in previous years, running the HSSEF event would not be successful without a strong corps of volunteers donating their time and energy to assist the three-person HAS staff. Almost 200 volunteer judges responded from the University of Hawai'i and other higher education institutions; as well as research or engineering businesses and professional organizations. Over 100 volunteers from school, civic and community groups comprised the volunteer staff to run the event operations. The staff from the Hawai'i Convention Center was also supportive and accommodating, helping the event through the many levels of logistics. ✎



The 2011 Hawai'i ISEF Delegation

Hawai'i State Science & Engineering Fair:

Dane Oshiro, Ross Ito
& Taylor Nakamura
Abraham Kwan
Quentin Kai Aknin
Shawnalyn Sunagawa
& Sara Middendorf
Sarah Tamashiro
& Lindsay Fujimoto

Maui High School
Moanalua High School
Punahou School

St. Andrew's Priory

St. Andrew's Priory

East Hawai'i:

Shalila de Bourmont

Hilo High School

Kauai:

Savanah Frisk, Coral Green
& Shanice Grijalva
Alyssa Braun, Ashley Bonilla
& Meghan Fujimoto
Noe Murray

Kapaa High School

Kauai High School
Kauai High School

Leeward Oahu:

Caelyn Udani
& Jazmin Nicholas
Danten Inouye

Campbell High School
Waipahu High School

Maui County:

Steven Okada
Michael Flynn

Baldwin High School
Maui High School

Windward Oahu:

Jessica Tew & Katelyn Orr

Kahuku High School

Hawai'i Association of Independent Schools:

Travis Le
Kang-Ying Liu

Punahou School
St. Andrew's Priory

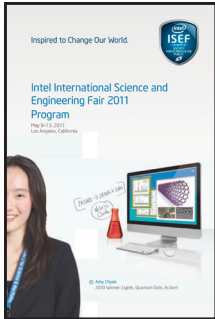
Additional Delegation (not shown)

Teachers, Fair Directors and Coaches:

Carolyn Kaichi
Jon Asato
Gareth Wynn-Williams
Kevin Johnson
Kimberlee Stuart
Kathy Lin
Chloe Sweetser
Mark Cunningham
Michael Grech
Esmeralda Carini
Brett Kewish

Hawai'i Academy of Science
Hawai'i Academy of Science
Hawai'i Academy of Science
Kauai District
Kauai District
Leeward District
Leeward District
Maui County District
St. Andrew's Priory
Windward Oahu District
Windward Oahu District

International Science & Engineering Fair (ISEF 2011)



ISEF 2011, the International Science and Engineering Fair, was held at the Los Angeles Convention Center in Downtown L.A. in May 2011. The Hawai'i Academy of Science hosted 26 regional and state students and 11 teacher/chaperones from around the state for the week-long competition. ISEF attracts thousands of contestants, chaperones, judges, volunteers and other participants to the event from over 65 countries, regions, and territories. The over 1,500 Finalists compete for over \$4 million in scholarships, trips, cash and other awards.

As if competing at an international level isn't exciting enough, just being situated in Los Angeles next to the famous Staples and L.A. Live Centers made the week a unique experience. Parties were hosted in true L.A. fashion, in the surrounding complex area and hotels. There was even an exclusive "ISEF Night" at Universal Studios Hollywood Theme Park just for the science fair participants! The Hawai'i Academy of Science also organized outside activities for the Hawai'i delegation: a trip to the Getty Center and taking in a Dodgers game at Dodger Stadium.

But earning a place at ISEF doesn't mean all fun and games. There is a high level of intensity on the floor of the exhibition hall as Finalists set up, prepare and practice for their interviews with judges. Rules and regulations are extensive and strictly enforced, so every detail must be in order. The Hawai'i support team (teachers and chaperones) along with ISEF judge and HAS board member Dr. Gareth Wynn-Williams, practice with each individual or team and offer feedback and suggestions.

Efforts on everyone's part paid off with four Hawai'i students winning international recognition for their projects. The 2010-2011 science fair season culminated with recognition from Governor Neil Abercrombie awarding the 26 Hawai'i ISEF finalists proclamations at a special ceremony on June 13, 2011. 🌺



Students enjoyed a game between the Arizona Diamondbacks and the Los Angeles Dodgers at Dodger Stadium on the final night of their trip.

Hawai'i's 2011 ISEF Award Winners

BEST OF CATEGORY FOURTH

PLACE - Mathematics

Fourth Award of \$500

Kang-Ying Liu (18), St. Andrew's Priory
New Triangle Centers Associated with a Triad of the Simulated Circumcircles

BEST OF CATEGORY FOURTH

PLACE - Physics and Astronomy

Fourth Award of \$500

Travis Le (16), Punahou School
Determining 'Hot Spots' Through Correlations of CMEs and Solar Flares

SPECIAL AWARDS:

UNITED TECHNOLOGIES CORPORATION - Electrical Engineering

Award of \$2000 in shares of UTC common stock & prize package

Shawnalyn Sunagawa (18) & Sara Middendorf (18), St. Andrew's Priory
PAWT (Polygonal Airfoil Wind Turbine), the Greener Future: An Innovative Approach to Engineering a Bladeless Wind Turbine

ISEF Student Profiles

Quentin Kai Akin's first experience of representing Hawai'i at ISEF was a "Ten."

"There was never a dull or inactive moment both as a result of the great organization of the Hawai'i Academy of Science, and the fantastic group of Hawai'i finalists who in only a week



became as close as family," he said. "I enjoyed all the activities especially the beautiful tour of the Getty Museum, and I really appreciated

the kindness and security from staff members who at the same time allowed us freedom to relax with our friends."

The winner of six awards at the HSSEF, Kai's project "Size-Dependent Cytokine Release from Murine Macrophages by Glycopeptide-Coated Gold Nanoparticles," caught the attention of Queen's Medical Center, which awarded him a summer internship at the Cancer Center of Hawai'i. Spending the summer in Hawai'i meant a change of plans.

"My father lives in France and my mom's family live in Singapore so I often find myself traveling the world many times throughout the year," said Kai. "My most treasured vacations are my summers in France to reconnect with my father, aunts, uncles and cousins, not to mention the glorious French cuisine," he explained.

However, within two days of starting his internship at the Hawai'i Cancer Center, Kai said he knew he was in for a fantastic summer. Best of all, his father



flew over from France to spend time in Hawai'i with Kai and learn about his prize-winning project.

"I'm truly grateful for the ISEF experience I received," Kai said. "I'm already looking for another project I can enter at HSSEF that hopefully will make it to ISEF 2012." ✨

Getting to the International Science and Engineering Fair takes dedication and hard work, says **Alyssa Braun**, "... being there is an unbelievable amount of fun!"

"I could present my scientific work to students, teachers, and scientists from all over the globe, and in the evening I had the time of my life going to ISEF dances and visiting Universal Studios," she said. "I also met a lot of new friends

Pre-Judging Rehearsals
Hilo High School junior Shalila de Bourmont runs through her presentation during rehearsals. The Hawai'i delegation is among the few who do walk-throughs on the exhibit floor in preparation.

from different nations that increased my knowledge of science and other cultures."

For the 17-year-old from Kauai High School, presenting her project



"Harvesting Electricity Through the Installation of a Cost-Efficient Mini Hydro Turbine into the Existing Domestic Water Supply" also meant overcoming a deep fear of public speaking.

... and the room temperature...
...powdery substance was stuck to the bottom.

PHASE 2: GENETIC IDENTIFICATION OF FUNGAL ENDOPHYTES

PCR

- A master mix of distilled water (18.5µL), buffer (12.25 µL), dNTP (10µL), T7E1 and T7E2 primers (5.63µL) was created and distributed into 2 test tubes.
- 0.5 µL of T7E1, Polymerase and 0.5 µL of fungal DNA was added per test tube and placed in a thermo cycler for 30 cycles where fungal DNA was denatured, primers attached during an annealing stage and complementary strands were synthesized during an elongation period resulting in thousands of copies of the fungal ITS region.

AGAROSE GEL ELECTROPHORESIS

- An agarose gel "slab" containing 8 wells was made with 1% agarose dissolved in electrophoresis buffer and mixed with ethidium bromide (1x) buffer.
- The gel slab was submerged under the buffer.
- Fungal DNA samples were mixed with a loading dye and placed into gel wells. The last well contained a DNA size marker.
- The gel tank was closed, and a current was run through the gel. During which DNA strands moved toward the positive plate.
- The gel slab was placed in a UV light box and a picture was taken.

“ISEF was definitely a motivational experience, it was by far the best experience of my life.”

- Shalila de Bourmont

Shalila de Bourmont felt overwhelmed as she entered the exhibition hall on opening day at the Los Angeles Convention Center for Intel’s 2011 International Science and Engineering Fair.

“To see how much effort had been put into ISEF for us was really impressive, and to meet so many other talented and incredibly gifted kids like me who are devoted to science was overwhelming,” she said. “After ISEF, I became even more driven to pursue science and it made me determined to continue competing in science fairs.”

You might say Shalila thrives on competition, in the lab and on the track. “I love all sports, cross-country



as well as track-and-field but first and foremost I’m a runner,” she explains. She’s currently training for a half-marathon and hopes to soon run a full

marathon. Her other passions are for art and music. Born in Colombia, South America, Shalila’s family moved to Hawai’i when she was seven and they return regularly to visit family and friends. She’s now a senior at Hilo High School and hopes to attend a college on the East Coast

to major in biomedical studies and beyond. Someday she would like to teach and conduct research.

Her science fair project is an impressive start. “Anti Cancer Properties of Fungal Endophytes Derived from *Clermontia parviflora*, a Native Hawaiian Plant” placed fifth in the Senior Research category at the Hawai’i State Science Fair, winning Honorable Mention as well as garnering 13 other prizes, including a top award from the Cancer Research Center of Hawai’i.

“Currently, I’m working on a new science fair project which will be a continuation of last year,” said Shalila. “ISEF was definitely a motivational experience, it was by far the best experience of my life.”

Michael Flynn reflects on the opportunities his science fair career has afforded him: “When I reflect back on



all of the activities I’ve participated in through high school, the greatest honors I’ve had have been linked to the Hawai’i Academy of

Science. Competing at the Hawai’i State Science Fair and Intel ISEF made me aware of the huge global community

of brilliant young people with interests similar to my own.

The science fair experience is incredibly rich; that ISEF includes interacting with Nobel Laureates is just one example of how transformative it can be for a high school student. Opportunities to compete, travel, and network are endless. I met no less than five other students in my class at MIT at the 2011 ISEF.

A prime example of how science fair can change you comes from my winning a trip to CERN (The European Organization for Nuclear Research) at the 2010 ISEF. At the time, I had done research in physics but had never given serious consideration to mathematics as a primary subject in college.

However, while staying at CERN, my roommate was the top winner in mathematics at ISEF, and his passion for the subject was inspiring. As a result of meeting him, I am now hoping to complete a double major in physics and mathematics, and this was only possible because of the efforts of the Academy in getting us to succeed at ISEF.

Stand-out experiences from the 2010 and 2011 ISEFs include going to baseball games with the Hawai'i delegation, discussing relativistic physics with Doug Osheroff (a Nobel prize winner in physics), and simply enjoying the hundreds of other interesting projects on display in the exhibition hall.

I love teaching, and during college I hope to tutor high school students and other undergraduates. I also hope to continue research through MIT's Undergraduate Research Opportunities Program." ❧

It's amazing to be part of a group that has the power to change the world, says **Savanah Frisk**.

"Socially and academically, being a part of the Hawai'i delegation to ISEF in 2011 was among the most beneficial experiences of my life," she said. "People



I met and the connections I've made mean so much. I still keep in touch with many of the students we became friends at the fair."

Savanah's project, "Who Do You Listen To?" presented with team members Coral Green and Shanice Grijalua of Kapa'a High School, Kauai, won third place in the Kauai District Fair.

The realization that she loves to experiment and problem-solve was a bonus of the competition, as was meeting like-minded people. "The vast student talent I encountered during the trip really inspired me to be all I could be and aim my goals high," she said.

After-school activities include theater group, notably performing with Pono Players, a Hawai'i Children's Theater peer-education group that addresses difficult social issues confronting Kauai's youth.

Currently in her junior year, Savanah says she's looking forward to expanding her science fair project for the 2012 HSSEF, and may consider genetic engineering as a career goal. "ISEF helped me grow as a person," she said. "It gave me a direction to follow in the years ahead." ❧



Judging Day at ISEF

Jazmine Nicholas (Campbell), Danten Inouye (Waipahu), Caelyn Udani (Campbell) and Steven Okada (Baldwin) pause for a group photo as before the opening of the exhibition hall.

Lindsay Fujimoto has a long list of what she's loved about representing Hawai'i at Intel's International Science and Engineering



Fair over three years: hearing a talk by Ajay Bhatt, the co-inventor of the USB port; touring the Lawrence Livermore

National Laboratory, home of the biggest laser in the world; visiting the hill top J. Paul Getty Museum, seeing



“At ISEF, I felt I could connect with everyone; it felt like the right place for me and it really heightened my interest in science.”

- Danten Inouye

the movie sets at Universal Studios, and attending a Dodgers baseball game.

Just as thrilling, she said, was having her photo taken with two Nobel Laureates she met as they strolled through the ISEF exhibition hall.

“In my three years as an Intel ISEF finalist, I’ve had some really amazing experiences,” she said. “Meeting new friends and presenting my work to judges who are the best in their field are

among my most treasured memories.”

In pursuing science as her career goal, Lindsay and classmate Sarah Tamashiro gained insight into the world of research. Their mentor Dr. Samir Khanal at the University of Hawai‘i provided them the opportunity to work on their science fair project in his lab.

Their project, “High Value Fungal Protein Cultivated in Five Carbon Biofuel Liquors” won an Honorable

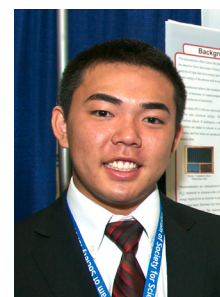
Mention in the Senior Research category at the 2011 Hawai‘i State Science and Engineering Fair. “I loved working in the lab and getting to do research at such a high level,” she said. “It gave me a sneak peek into what I hope is my future as a research scientist.”

After graduating from St Andrew’s Priory, Lindsay now attends Grinnell College in Iowa majoring in biochemistry. She’ll be playing collegiate women’s volleyball and dancing hula in her free time.

“Competing in science fairs since seventh grade has had a huge impact on choosing this course of study,” she said. “I hope to become a successful research scientist, to create new products to benefit humanity, and to help create a better world for us to live in.”

Contributing to society through science is the challenge **Danten Inouye** sees in his future.

Inspired by his experience at the International Science and Engineering Fair 2011, the Waipahu High School



senior called it the “highlight of his life.” “At ISEF, I felt I could connect with everyone; it felt like the right place for me and it really heightened

my interest in science,” he said.

Danten’s project, “Determining the Effects of Extreme Temperature Fluctuations on the Efficacy of Photovoltaic Cells” won him an award from the U.S. Army at the 2011 Hawai‘i State Science and Engineering Fair.

Immersed in Waipahu High School's strong science program, Danten also leads the school's science bowl team and is president of the school's Engineer-Robotics Club. He plays soccer as well.

He is the first in his family to consider science as a career, and Danten says he's excited about his future options within the discipline. "My aspiration would be to win a Nobel Prize," he said. "But I would be satisfied knowing I had made a contribution to society in science."

"I'm taking as many AP science and math courses as I can and committing my time to science fair," he said. "I want to have a great last year in high school and qualify for ISEF 2012." ❧

We may take Hawaii's sunny weather for granted but **Travis Le** knows that weather on the sun is far from constant. Solar storms can have devastating effects on earth.

His project, "Determining 'Hot Spots' through Correlations of CMEs (coronal mass ejections) and Solar



Flares" focused on massive bursts of magnetized energy from the sun and their potential for knocking out and silencing the Earth's multibillion

dollar satellite and communication systems.

The project won the Punahou senior Fourth Place in the Physics and Astronomy category, as well as an Honorable Mention for the AAPT/APS award at ISEF in Los Angeles this year. "I was surprised and ecstatic to be placed fourth," said Travis. "ISEF was one of the most memorable experiences of my life."

While math, physics and astronomy fill his life, Travis also plays tennis and the piano. He's an avid stargazer and an active member of the Hawaiian Astronomical Society, where he helps to teach the public about the night sky at the amateur club's star parties.

As his senior year gets busy with college applications, Travis hopes to

**"I'm so grateful for the experience and opportunity to grow as a person during ISEF."
- Sara Middendorf**

also fit in a course at the University of Hawai'i. "I plan to enter HSSEF next year and hopefully go back to ISEF 2012 for a fourth and final time," he said.

Asked what made ISEF 2011 so memorable, he'll tell you about the week that led to the awards. "Walking in Santa Monica and shopping at Trader Joe's to the student pin exchange, and Universal Studios, we not only bonded as a Hawai'i Delegation but also got to meet new people from all over the world who share the same passion for science," he said.

"ISEF really broke the stereotype image of science types being nerds," he said. "These people were really cool." ❧

Discovering the beauty in mathematics has captivated **Kang-Ying "Connie" Liu** since she was a small child. Triangles held a special fascination.

Devising a new geometric formula for describing triangle centers became

the challenge she set for herself in her junior and senior years at St. Andrew's Priory, where she produced not one but nine new formulas. Two of those formulas have been published in Clark Kimberling's *Encyclopedia of Triangle Centers* and named after her.

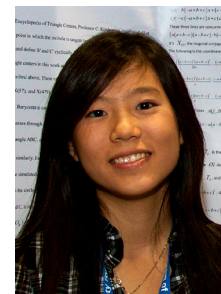
Connie's display won First Place in senior research at the 2010 and 2011

Hawai'i State Science and Engineering Fairs, and a Fourth-Place award in the mathematics category at Intel's 2011

International Science and Engineering Fair in Los Angeles in May.

"My topic is so unique that it had hardly been discussed in class," Connie said. "HSSEF provided a great opportunity for me to present my project to the judges who excel in this field." In fact, University of Hawai'i judge J.B. Nation described her breakthrough results as so accomplished as to equal college graduate-level work.

This fall Connie returned home to Taiwan to attend National Yang-Ming University in Taipei where she is majoring in medicine. "ISEF was really a wonderful experience for me. It opened my mind and helped me





Post-Award Ceremony

ISEF Award winners Kang-Ying Liu, Sara Middendorf, Travis Le, and Shawnalyn Sunagawa pose for a group photo outside the Los Angeles Convention Center after the Grand Awards Ceremony.

see the world,” said Connie. “It felt amazing and unbelievable walking on stage. Receiving an award gave me great confidence. I would not have been able to achieve this without the help of the Hawai‘i Academy of Science and my teachers who always supported me.”

“Connie has an amazing ability to think outside the box,” said Priory science teacher Michael Grech. “She is a very passionate and diverse student and not just a bright mathematician but also an amazing artist.”

The highlights of Intel’s International Science and Engineering Fair for Sara Middendorf was meeting so many new and different people, and learning about all the different projects. “Usually people who like science and math are seen as ‘nerds,’” Sara said. “But (at ISEF) it was so great to see everyone



so excited about science all in one place.” Sara and her science fair partner Shawnalyn Sunagawa of St. Andrew’s Priory each won \$1,000 from the United Technologies Corporation for their project on a bladeless wind turbine. The

Priory seniors were two of four Hawai‘i students to win awards at ISEF.

“I really did not expect to win anything since ISEF is extremely competitive and there are so many participants,” she said. “It was a huge surprise to win an award.”

And well-earned, said Priory Science teacher Michael Grech: “Sara is such a joy to be around, she is filled with life and is always easy to work with. Sara takes all suggestive criticism to heart and makes the necessary changes to perfect whatever she does.”

As a freshman this fall attending the University of Notre Dame, Sara plans to major in Science and Business. Also an active volleyball player, she is especially interested in sports medicine. “I plan to play volleyball in my spare time as

well as find volunteer or internship opportunities in the sports medicine field,” she said. “I’m so grateful for the experience and opportunity to grow as a person during ISEF.” 🌿

Exchanging ideas, meeting fellow students, and calibrating to the high-energy world of ISEF left vivid impressions on **Noelani Murray**.

“ISEF opened my eyes to the potential (for our generation) in science and engineering,” she said. “The positive

“Science fairs taught me through experience how to deal and work with others to accomplish anything.”

- Taylor Nakamura

energy, and all the encouragement to pursue scientific research really inspired me to learn more about science, and particularly to pursue my interest in biology.”



Noelani described the extra-curricular events she felt were big hits: “Touring Universal Studios, dance parties, and great (free!) food!” Also, one of ISEF’s favorite traditions is the “pin-exchange” event. “Not having ever been out of the U.S., I loved meeting so many people from foreign countries,” she said. “We traded pins of our own state or country, and met new people from different countries and become a bit more familiar with their culture.”

“I collected seventy-something pins ... I met several students from Japan and I was so excited to attempt speaking Japanese and exchange simple Japanese conversation with them. I added a girl on Facebook that I met and am now pen pals with her,” she added.

Noelani lives on Kauai with her family of five. She loves tennis, hanging out with her friends, and is active in her church. She frequently babysits to earn extra cash and hopes to get her driving license soon.

Noelani, a junior this year at Kauai High School, plans to expand on her science fair project “The Effects of Various Carbon Sources on the Growth Rate and Lipid Production of *chlorella* sp.” for HSSEF 2012. “My brightest idea is to do something that analyzes the lipid content in the algae cells,” she said. “By the end of my high school career I am set on doing something innovative with algae bio fuels.” 🌿

Taylor Nakamura hadn’t given too much thought to group dynamics until he and fellow students on Maui began tossing around ideas for their 2011 science fair project: “Light Curve Dip Analysis for Exoplanet Systems.”

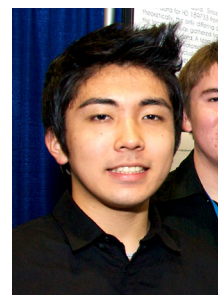
You could say that was when the light went on.



Haka Rehearsals

Maui High School science fair team members Dane Oshiro, Ross Ito, and Taylor Nakamura share a laugh during rehearsals. Ross led the haka chant while Taylor played the opening conch shell.

“In high school, my primary focus was on math and science. I was so intent on becoming an engineer or a rocket scientist that I hadn’t thought



through if they were right for me,” Taylor said. He realized that aside from the science, the excitement for him lay in communicating

ideas within the group.

“Human interaction is one of the most fascinating aspects of life —how



people react — according to feelings, thoughts and past experiences,” he said. “Just understanding that everyone has different perspectives and objectives enabled me to reason and work through the project difficulties.”

Taylor is a freshman at Occidental College in Los Angeles, and plans to major in economics. “Working with people and creating relationships is something I love, and it’s why I want to pursue my passion for economics and business and better my understanding of our economy as a whole,” he says. “Creating business relationships or defending a client is what interests me far more than sitting at a computer working on programs.”

Taylor credits the International Science and Engineering Fair for the

opportunity to network with others and create a small tight knit family with the Hawai‘i delegation. “ISEF played a major part in creating the person I am today,” he said. “From the countless hours dedicated to our project, to the many relationships created in a little over a week, ISEF taught me through experience how to deal and work with others to accomplish anything.” ❧

When President Obama talked about training 10,000 new engineers as part of the American Jobs Act recently, he could have had **Shawnalyn Sunagawa** in mind. As a member of St. Andrew’s Priory rocket team, building model rockets to soar more than 1,000 feet felt like a “totally cool thing to do,” and ignited her passion for science.

With science fair partner Sara Middendorf, their winning design for a bladeless wind turbine led to the ISEF trip and an award from United Technologies Corp. in the electrical engineering category at ISEF 2011 in Los Angeles, California.

“ISEF was an amazing experience,” said Shawnalyn, “... a place to meet new friends and be surrounded by people just as passionate about the sciences as I am, and also a place to find so many fascinating and intelligent leaders of tomorrow.”

She hopes to be one of those leaders someday. “Shawnalyn is a natural leader



with a great sense of humor and a strong work ethic,” said Priory science teacher Michael Grech. “She always looked forward to the time she

would spend working weekends and over breaks on her project with her teammate Sara.”

After a busy senior year as 2011 class president, captain of Priory’s varsity tennis team, volunteering and performing at the Merrie Monarch Hula Festival, Shawnalyn is now a freshman at Creighton University in Omaha, NE. She plans a career in either biomedical engineering or pediatrics.

Settling into the demands of college life has proven exciting. “I love Creighton--the people here as well as the academics and clubs are wonderful,” she wrote by email. “I’m a member of Creighton’s Hui O Hawai‘i and will be dancing with them in our annual luau in March. I’m really looking forward to that.” ❧

The lessons learned from participating in Intel's International Science and Engineering Fair goes far beyond the science and the prize money, says **Sarah Tamashiro**. It's also about relationships. "How cool is it to say that the people presenting projects next to you will become the movers and shakers of science in the next 20 years or less, and will also become your close friends?" she said.

A three-time Hawai'i delegate to ISEF, Sarah and her partner Lindsey Fujimoto (both from St. Andrew's Priory) developed a project that focused on using one of Hawaii's most abundant natural resources, algae, for bio fuel production.

A freshman at Fairfield University, Fairfield, CT this fall, Sarah is pursuing a double major in Art History and Film, and she credits ISEF with helping her make that choice. "Taking a risk and dreaming of going to ISEF in 9th grade taught me to search for that excitement in other places which led to an internship at Iolani Palace and beginning a film documentary as a high school senior," she explains.



"Pursuing the arts seems to be the opposite of my work in science since 6th grade but the same disciplines of patience, planning and problem solving used in the lab apply to every field," Sarah said. "Science will always be part of my life."

ISEF made her proud to represent Hawai'i. "At the ceremonies our energy was magnetic and we 'adopted' many people who were distanced from their own delegations into our group," she said. "I'm grateful for every hour spent with them that week and I'm excited to see what scientific barriers they break in the future." ❁

With talents as a songstress, pianist, poet and cook, **Jessica Tew** loves meeting people from different cultures and backgrounds.

Her science fair project, "How Do You Think?" which she presented with partner Katelyn Orr at the 2011 International Science and Engineering Fair in Los Angeles, CA, looked at finding the connection between the language one speaks and the way a person thinks, reflecting a growing interest in the social sciences—particularly sociology.

"ISEF was the experience of a lifetime," she said. "It opened my eyes to fields of science I hadn't realized were approachable. I had fabulous opportunities to learn about



Delegation Song Rehearsals

Sarah Tamashiro (St. Andrews Priory) plays "Hawai'i Aloha" during song rehearsals. The group recognizes the end of ISEF with song.

other cultures and people and to meet adults who want me to succeed in my education."

The eldest of five adopted children, the Kahuku High School graduate said she hopes "more than anything" to make a difference in people's lives, and has been inspired and encouraged toward social sciences by her family's social worker. "I may continue on to social work and do my best to

help children like me find families and peace, or I might major in anthropology where I would learn and appreciate different cultures by studying abroad," she says.



A freshman at Brigham Young University in Provo, UT this fall, Jessica says the most important things she took

with her to college is the desire to explore, discover, grow in character and become more independent. "At ISEF I was really exposed to those feelings in a way I'd never thought about before. It made me excited to start anew in college. ISEF really changed my educational future." ❁

2011 HSSEF / Chevron Teacher Award

The Hawai'i Academy of Science congratulates Kathy Lin on her 2011 HSSEF/Chevron sponsored award to the International Science and Engineering Fair, in Los Angeles, CA.

This is not Lin's first sponsored ISEF trip, however. The Highlands Intermediate School science teacher was a 1988 and 1989 state Science Fair winner who also placed at ISEF in her senior year at Castle High School. Lin's high school projects focused on the presence of allelochemicals in centipede grass, and a possible correlation between centipede grass and the difference in size of cinnamon trees in her neighborhood.

A biologist by training, Lin engages her students in science every day by encouraging them to explore what they see around them — with successful results. At HSSEF this year, Lin's students presented 24 projects on topics ranging from obesity to hydroponics, nanobots, composting, saving birds from turbine blades, and the strength of bridges. Eight projects won awards.

How does she achieve her results? Lin explains in her own words:

How do you engage your students in science?

"Coming up with ideas is often the most difficult thing for kids. I encourage students to select a project that is in their own interest area."



Right: Highlands Intermediate teacher Kathy Lin accepts her 2011 HSSEF / Chevron Teacher Award at the Awards Ceremony held March 31, 2011 at the Hawai'i Convention Center.



Below: Lin offers feedback to a student finalist during rehearsals at the 2011 International Science & Engineering Fair.

Which scientific field interests you most and why?

"I enjoy robotics. I like science, technology, engineering and math (STEM) activities in general. I enjoy encouraging, guiding and teaching students to think and problem solve."

As an ISEF alumna, what changes do you see between 1989 and now?

"Yes, I attended Castle High and I went to ISEF in 1988 and '89. One difference I see is that many students are working in professional laboratories with scientists and engineers. Otherwise, the science process is the same."

What message is most important to get across in science teaching?

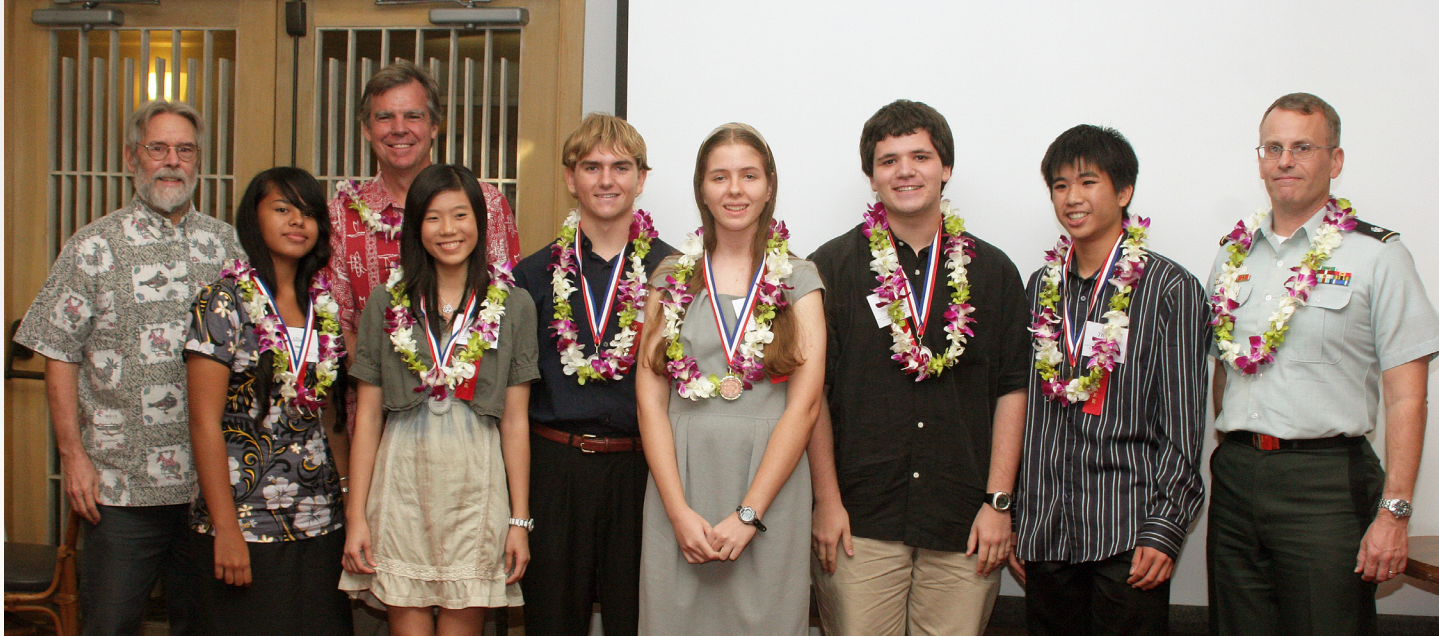
"That there is no one perfect answer to a problem. I encourage kids to come up with multiple solutions to the same problem."

Which students benefit most from science fair projects?

"EVERY student benefits; 100 percent of my students complete a science fair project. Students not only learn science but reading and writing in the process."

What was most exciting for you about returning to ISEF in 2011?

"After doing science fairs for 10 years as a teacher, attending ISEF really emphasized the importance of continuing the science fairs for my students." 🌸



Pacific Symposium for Science and Sustainability

The Pacific Symposium for Science and Sustainability (PS3) is one of 49 regional Junior Science and Humanities Symposia (JSHS) funded by the Research Offices of the US Army, Navy, and Air Force. The program is administered by the Academy of Applied Science located in Concord, New Hampshire in cooperation with nationwide colleges and universities and other STEM education societies.

The PS3 program encourages high school students to challenge themselves through experimental research, and aims to prepare and support students to contribute to society as future scientists and engineers. At the regional and national symposia students learn from each other as well as from distinguished scientists, engineers, and educators.

At the 2010–2011 Pacific Symposium for Science and Sustainability, held at the University of Hawai‘i Manoa campus in Honolulu, library research papers are accepted in addition to experimental research papers. However, only students conducting experimental research are eligible to be finalists representing Hawai‘i at the National JSHS. Ninety-six high school students from Oahu, Maui, Hawai‘i Island, American Samoa and Micronesia entered this regional competition coordinated by the Academy.

Students submitted papers summarizing scientific research they have performed during the year. HAS judges selected the top students who were invited to participate in the weekend symposium. Each student gave a 10-minute oral presentation in sessions throughout the day to a panel of scientists from various fields of study. This year’s five PS3 students from Hawai‘i and American Samoa represented the Pacific region in the 49th National Junior Science & Humanities Symposium (JSHS) in San Diego, CA.

The following are the top six winners and their awards:

1st Place:

Travis Le - Punahou School
\$2000 scholarship to the college of choice
“A Comparison of Similar Planetary Systems of WASP-2”

2nd Place:

Kang Ying Liu - St. Andrew’s Priory
\$1500 scholarship to the college of choice
“New Triangle Centers Associated with a Triad of Simulated Circumstances”

3rd Place:

Michael Flynn - Maui High School
\$1000 scholarship to the college of choice
“Measuring the Passage of Time for Bodies at Relativistic Speeds with Dynamic Velocities”

4th Place:

Nathaniel Goodale - Kealakehe H.S.
“A Cultural Solution for an Alien Problem: The Eradication of Gambusia From Our Anchialine Ponds”

5th Place:

Allison Fitisone - Tafuna H.S., Amer Samoa
“The Oviposition Response Of Gravid Mosquitoes Towards Chemical Cues Given Off By Vegetation In American Samoa”

Runner-Up (Alternate):

Viola Mocz - Mililani High School
“A Fossil Fish Model for Robotic Fish: Learning from Evolutionary Hydrodynamics to Design Better Underwater Vehicles”

Travis Le and Kang Ying Liu presented at the National Symposium in late April. Winners from that competition went on to the London International Youth Science Forum in the Fall of 2011. The other students participated at the JSHS for other awards but were not eligible for the international competition. All of the HAS nominated students did a fantastic job of representing the state of Hawai‘i. Their science projects were on a par with or better than those of many of the top high school science students in the nation.

Bernard J. Kilonsky

Director, Pacific Symposium for Science and Sustainability

Science Café

The Science Café is a monthly get-together for anyone who likes to discuss science with a glass or fork in hand, and we have completed another successful season. During the 2010–11 academic year we addressed topics ranging from fish to fusion, syllabi to solar power and dengue fever to DNA.

Aside from the variety of topics, we also went “bar-hopping”, as PF Chang’s underwent some renovations to their restaurant early in the year. From the Ward location, the Café moved to Brasserie Du Vin in Downtown then to Assagio’s in Kahala. Although all locations had their strengths, the Café organizers agreed that PF Chang’s had the most to offer for our event. So beginning in September, the Café reconvened back at the Ward area restaurant.

The atmosphere at a Science Café is very casual and dining is ala carte. Occasionally pupu are provided through one of our sponsors, but the food at PF Chang’s is hard to resist. Come before 6 P.M. and Happy Hour prices are in effect and are very reasonable. The “lecture” part of the Café begins at 7 P.M. and generally runs about a half hour. Questions, comments and opinions from our guests are welcome and encouraged.

For more information, please visit our website. - **Gareth Wynn-Williams**

2011 HIGHLIGHTS:

January - **Dr. Bruce Anderson**, Hawai‘i Pacific University: Dengue Fever

February - **Dr. Peter Mouginis-Mark**, Hawai‘i Institute of Geophysics: Progressing Towards Hawaii’s Own Space Program

March - **Dr. Peter Gorham**, UH High Energy Physics Group: Searching for Neutrinos in Antarctica: Astrophysics at the Ends of the Earth

April - **Tim Wong**, Sopogy MicroCSP: Micro-scale Concentrated Solar Power (MicroSCP)

May - **Dr. Michael DeWeert**, BAE Systems: The Thorium Energy Amplifier and a Sustainable Energy Future

June–August *SUMMER BREAK*

2010 HIGHLIGHTS:

January - **Dr. Neal Atebara**, Retina Center of Hawai‘i: A New Eye on Diabetes

February - **Dr. Eric Miller**, UH Natural Energy Institute: Riding the Green Wave-The Oncoming Surge of Renewable Energy Technologies and Jobs in Hawaii’s Future

March - **Dr. Chris Measures**, UH Dept. of Oceanography: Burying Atmospheric CO₂, Hope or Hype?

April - **Dr. James Campbell**, Asia-Pacific Center for Security Studies: Protecting the Pacific from Pandemic Panic

May - **Gerard Fryer**, NOAA Pacific Tsunami Warning Center: Tsunami Warning: Lessons Gathered From The Response to the 2010 Chile Tsunami



Financial Summary



Kerry Kakazu
HAS CEO

I am very honored and excited to address you as the new CEO of the Hawai'i Academy of Science. This is a newly established position, part of the compensated staff of the Academy. The current Executive Council recognized the challenge of maintaining and sustaining the Academy and its primary activity, the Hawai'i State Science and Engineering Fair, with a primarily volunteer organization and small staff. It made the decision to establish this position to oversee the operation of the organization and to implement the strategic initiatives necessary for the development of the Academy. As we are all aware, the current funding situation for the Academy remains tenuous and we need to be aggressive in our efforts to raise money for all of our educational activities. We can no longer rely on funding from the State and need to increase revenue from both private donations and competitive grants and contracts through Federal, State and private sources.

Dr. Neal Atebara as the fund-raising chairman has been very successful in increasing private donations to the Academy through his extraordinary efforts. One aspect of my job will be to increase the visibility of the Academy and its projects and raise awareness of the contributions we make to furthering science education and the development of our State's children as future contributors to society. While that message is clear and indisputable, we all need to help deliver it to the community. I've learned that relationship building is critical in fundraising and we need everyone in our organization engaged in this activity to be successful.

The Academy is very fortunate to have in place a contract with the State Department of Education (DOE) this year that provides \$425,000 to run the Science Fair. These were monies that came to the State from the federal American Recovery and Reinvestment Act (ARRA) funds and are a one-time award. We have also been able to secure other smaller grants through the efforts of many of our council members. It is clear that we need to increase our grant and contract portfolio to sustain our organization in the future. We will be working to align our activities with those of the DOE Science, Technology, Engineering and Math (STEM) initiatives to leverage our collective efforts into future grants and contracts. Again I ask for everyone's help in identifying sources for other potential awards that will help us fulfill our mission to promote science awareness and education in Hawai'i.

It is clear that we have many challenges ahead of us to continue the development of the Hawai'i Academy of Science. We have been fortunate that the outstanding efforts of the organization and its dedicated staff have made the Academy a success thus far. As a former science fair participant, judge and Academy council member, I am eager to contribute to this success in my new role. My entire career has been dedicated to science research, education and administration and I intend to apply all of those experiences to the Academy's endeavors. Thank you for this opportunity and I look forward to working with all of you.

Sincerely,

Kerry Kakazu, Ph.D.

CEO, Hawai'i Academy of Science

Statement of Activity for the Fiscal Year Ending June 30, 2011 (Unaudited)

Financial Position

ASSETS

CURRENT ASSETS

Cash and cash equivalents \$246,990

FIXED ASSETS

Furniture and Equipment \$350

Total Assets \$247,339

LIABILITIES AND EQUITY

LIABILITIES

Credit cards payable \$300

Total Liabilities \$300

NET ASSETS

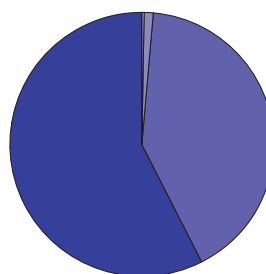
Unrestricted \$183,451

Temporarily Restricted \$63,588

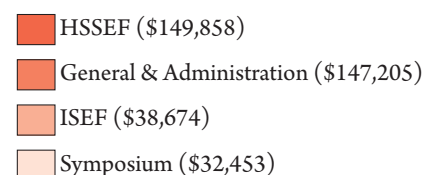
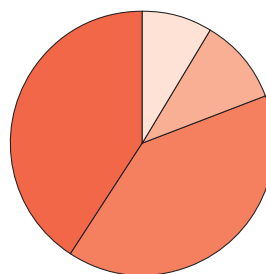
Total Net Assets \$247,039

Total Liabilities & Net Assets \$247,339

Income



Expenses



Functional Expenses

	Program Services			General & Administration	Total
	HSSEF	ISEF	PS3		
Awards	\$28,624	\$-	\$-	\$-	\$28,624
Travel	379	30,070	15,198	-	45,647
Venue rental	46,900	-	708	-	47,607
Meals	671	1,172	12,932	7,875	22,649
Printing & publications	12,443	327	528	379	13,676
Miscellaneous	647	-	87	289	1,023
Supplies	18,971	80	476	1,177	20,705
Insurance	1,835	-	-	-	1,682
Dues & Fees	-	7,025	-	699	7,724
Postage & shipping	-	-	-	684	684
Professional Fees	39,542	-	2,500	1,921	43,963
Payroll	-	-	-	129,645	129,645
Facilities	-	-	-	1,491	1,491
Telecom	-	-	-	271	271
Bank & Financial Fees	-	-	24	2,775	2,799
Totals	\$149,858	\$38,674	\$32,453	\$147,205	\$368,190

2010–2011 State Science Fair Sponsors

Associate Sponsors (Sponsorship/Partnership)

University of Hawai'i at Manoa, College of Education
State of Hawai'i, Department of Education
NOAA's Pacific Region & The National Marine Sanctuary
Foundation

Platinum Sponsors (\$25,000+)

McInerney Foundation
NOAA Fisheries Service - Pacific Islands Regional Office

Gold Sponsors (\$24,999–\$10,000)

Bank of Hawaii
First Hawaiian Bank Foundation
The Queen's Health Systems
The Queen's Medical Center
Omidyar 'Ohana Fund at the Hawai'i Community Foundation
Verizon Foundation

Silver Sponsors (\$9,999–\$5,000)

Ben Franklin Crafts/Ace Hardware Hawaii
AlohaCare
Chevron USA
Entrepreneurs Foundation of Hawai'i
Hawaiian Electric Company, Inc.
KTA Super Stores
Kobayashi Development Group
Syngenta Crop Protection, Inc.
Thirty Meter Telescope

Bronze Sponsors (\$4,999–\$1,000)

Dr. Neal & Fay Atebara
Carrier Hawaii
Castle Medical Center
Chaminade University
Coffman Engineers, Inc.
Dr. Andrea Fleig
Forest Solutions Inc.
The Gas Company
Hawai'i Pacific Health
HMSA (Hawaii Medical Service Association)
Dr. Jerris Hedges
Hoku Scientific Charitable Fund at the Hawai'i Community
Foundation

Bronze Sponsors (continued) (\$4,999–\$1,000)

Kai Hawaii, Inc.
Kaiser Permanente Executive Office
Kenneth CM Lee
Ms. Iris Shinseki's Aiea High Jr. Researchers
Monsanto Company
National Solar Observatory (NSO, ATST, AURA)
Queen Emma Land Co.
Sumitomo
Silicon Valley Community Foundation
Stephanie Suzuki
UH Foundation - John A. Burns School of Medicine (JAB-
SOM)
Arthur Ushijima

Contributors (\$999–\$500)

Alexander & Baldwin Foundation
American Council of Engineering Companies of Hawaii
CH2M Hill
Demetria C.Q. Leong, M.D.
Flora Ling
Sigma Xi, Hawaii Chapter
The James and Juanita Wo Foundation

Friends (\$499–\$100)

AECOM (Formerly M&E Associates)
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Structural Engineers Association of Hawaii
Thermal Engineering Corp.
Dr. & Mrs. Gareth Wynn-Williams
Y. Ebisu & Associates
Keith K. Yamakawa, DDS, LLC

Major Awards Presented at the State Science Fair

ISEF Trip Award Sponsors:

Advanced Technology Solar Telescope

Association of Universities for Research in Astronomy

BAE Systems Employees

Chevron

Hawaiian Electric Company

National Solar Observatory

Best in Division: Hawai'i Academy of Science Grand Awards

The best projects in the Senior Research, Junior Research, and Junior Display Divisions were awarded plaques and ribbons by the Hawai'i Academy of Science. The best individual projects in categories 1–17 of the Senior and Junior Research Divisions were awarded cash prizes by the Academy.

Best in Category: Hawai'i Academy of Science

The best project in each category were awarded a ribbon by the Hawai'i Academy of Science. The Academy reserves the right to not award ribbons in categories where there are no worthy projects.

McInerny Foundation Scholarship Awards

Seven (7) 12th grade students with outstanding projects received a \$1000 scholarship award from the McInerny Foundation. Preference was given to projects in Engineering, Math, Physics, Chemistry, Computer Science and Space Science. The teachers of the winners received a matching \$1000 award to purchase classroom supplies and teaching aids.

The Queen's Medical Center

Twelve (12) \$500 Awards were given to JR/SR Students in the categories of Biochemistry, Medicine & Health, and Microbiology.

College of Engineering, University of Hawai'i, Manoa

Two (2) \$300 SR Student Awards, four (4) \$100 JR Student Awards, and two (2) \$100 Teacher Awards were given.

Hawaii Medical Service Association

Two (2) \$500 Awards for SR Students were given in the category of Medicine & Health.

College Scholarships

The following institutions and organizations awarded scholarships: Hawai'i Pacific University and the University of Hawai'i Foundation.

Best Public School Junior Research Project: Hawaii State Dept. of Education

The Chamberlin Perpetual Trophy and \$250 cash was awarded by the Hawaii State Department of Education to the best Junior Division research project by a public school student.

Institute for Astronomy - University of Hawai'i Awards

The student with the best astronomy project in the Senior Research division won a trip to Mauna Kea and an evening at a telescope. Prizes were awarded to the best astronomy projects in the Junior Division.

Agency Awards

Over 100 organizations provided a wide range of awards in their particular areas of interest.



HAWAI'I ACADEMY OF SCIENCE

ANNUAL REPORT 2011

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