

Fwd: Letter from the Head of School 1_9_18

1 message

Timothy Cottrell <tcottrell@iolani.org>
Bcc: facstaffk-12@iolani.org

Tue, Jan 9, 2018 at 9:38 AM

January 9, 2018

Dear Parents,

Science Fair 2018

This past Friday, 'Iolani held its Science Fair. The 15 senior research investigations covered topics ranging from how sunscreens affect coral bleaching, the effects music on the sleep quality of Alzheimer's patients, to the correlation between the ACTN3 gene and ACL injury. Eleven of the students are enrolled in Honors Scientific Research, 3 of the students are enrolled in AP Research (part of the two year AP Capstone sequence) and 5 of the students were recipients of the John and Violet Kay Summer Research Fellowship this last summer.

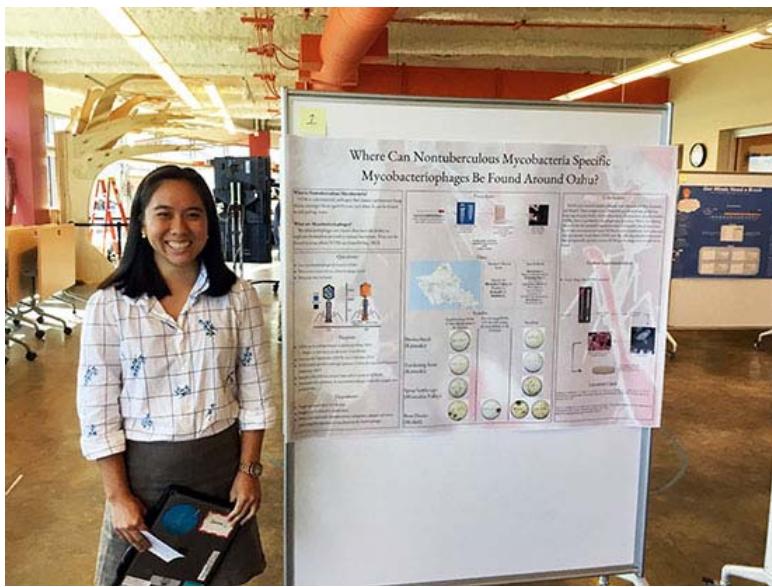
Thank you to Scott Weaver and Kyle Miyamoto for technical support, helping to print the professional looking posters. Thank you to our team of 10 judges who generously gave their time and energy to provide feedback to these students. And thank you to these amazing students, their mentors (particularly Chris Wall, Trevor Torigoe, Jennifer Honda, Debbie Millikan, Jeff Stern, Ernette Au, Robert Kane, and Cory Yap), and the generous support of 'Iolani School that made this event possible.

Dr. Yvonne Chan does a spectacular job of building on the research science tradition of Jack Kay in the fourth floor Sullivan Center research lab. Students are most often doing university-level research and each year a number of papers resulting from the work will be published in peer-reviewed journals. If your student has an interest in science, encourage them to consider the research science program during both the summer and academic year.

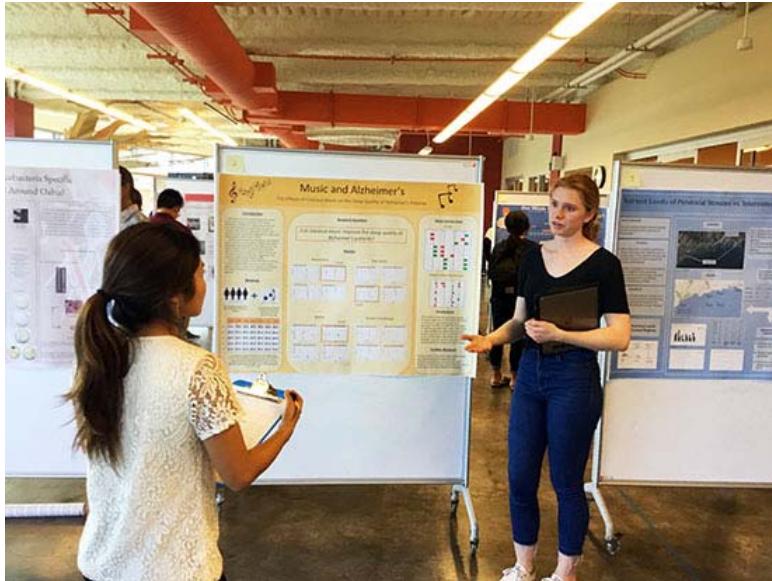
The projects are listed below by student, research title and category of research.



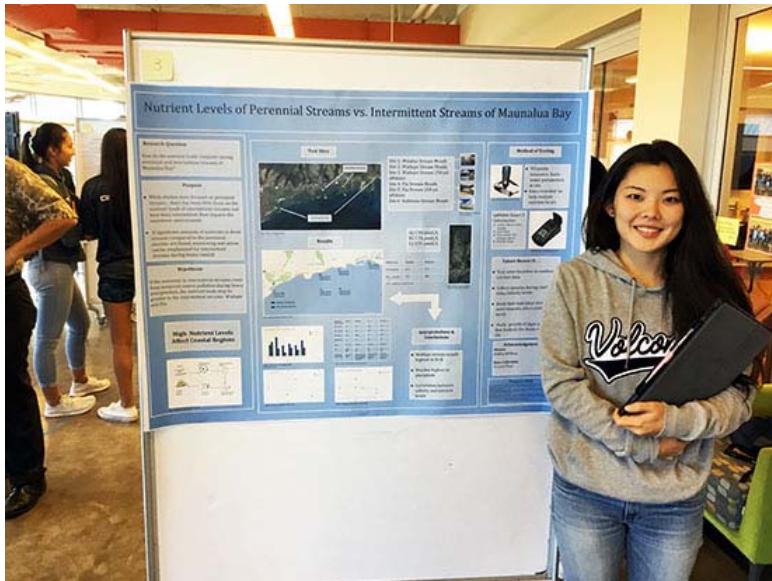
Sarisa Choy '18, Where can Nontuberculous Mycobacteria Specific Mycobacteriophages Be Found Around Oahu?, Microbiology



Ana Danko '18, Music and Alzheimer's: The Effects of Classical Music on the Sleep Quality of Alzheimer's Patients, Behavioral & Social



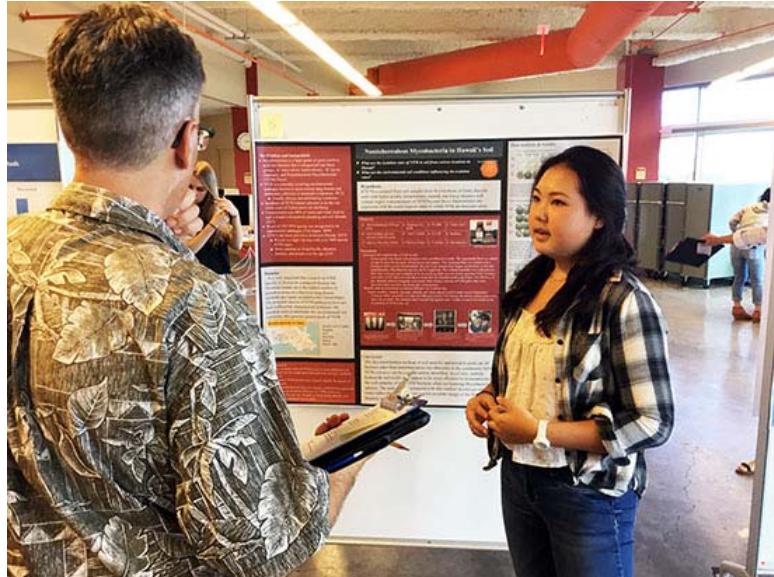
Karissa Dunn '18, Nutrient Levels of Perennial Streams vs. Intermittent Streams of Maunalua Bay, Earth & Environmental



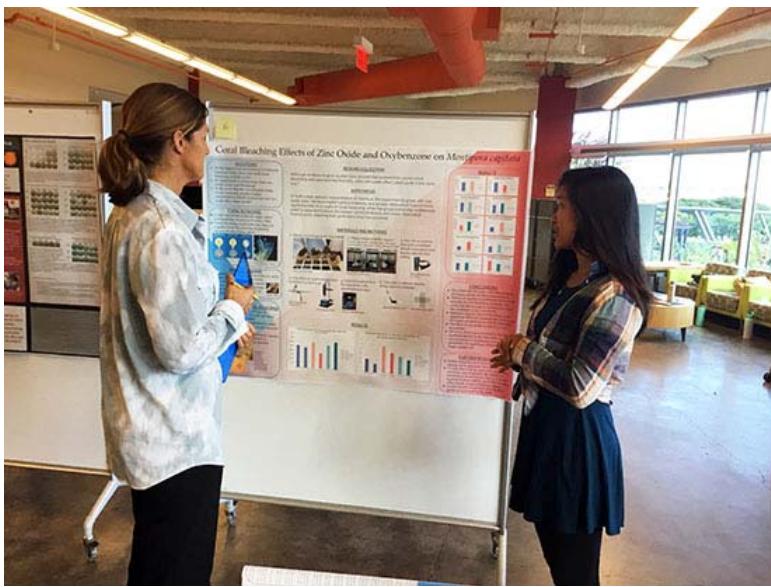
Cami Keahi '19, How healthy is poi? The difference in the probiotic bacterial content of poi from different production methods, Microbiology



Kyla Kohara '12, Nontuberculous Mycobacteria in Hawaii's Soil, Microbiology



Bethany Lum '12, Coral Bleaching Effects of Zinc Oxide and Oxybenzone on *Montipora capitata*, Earth & Environmental



Lexie Masca '19, Correlation between the ACTN3 gene and ACL injury, Biomedical & Health Sciences



Brandon Ng '20, Is there *Vibrio cholerae* in the Ala Wai Canal? Genetic Identification of samples taken from the Ala Wai Canal uncovers *Vibrio cholerae*, Microbiology

Is there *Vibrio cholerae* in the Ala Wai Canal?

Genetic Identification of samples taken from the Ala Wai Canal uncovers *Vibrio cholerae*

Methods and Materials

Questions:

- Is there *V.cholerae* in the Ala Wai Canal?

• If so, does it pose a potential danger?

Introduction:

- *Vibrio cholerae* is a member of the genus *Vibrio*, with other bacteria like *Vibrio* to *Vibrio* or *Vibrio* (*Vibrio* 2004).

• *Vibrio cholerae* has two types: An environmental type, which is not a threat to humans, and the toxic type which causes the disease Cholera.

• Cholera affected 17,454 people in 2005, mostly in developing countries (World Health Organization, 2007).

• Cholera can cause gastrointestinal and watery diarrhea (Sedlmeir Ph.D., 2007).

• *Vibrio cholerae* is the primary obstacle in correctly identifying *Vibrio cholerae* samples (Chen et al. 1999).

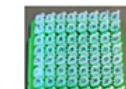
• When using the 16S rRNA primers of the ribosomal RNA, primers to PCR the *Vibrio* samples, the 16S rRNA gene of the 16S rRNA primers has been determined to have protein coding for the 16S rRNA nearly identical to those of *Vibrio cholerae* (Claus et al. 1999).

• However, in 2005, it was found that *Vibrio cholerae* has a gene that 16S rRNA primers doesn't have being amplified using by ITS, or Internal Transcribed Spacers primer (Chen et al. 1999).

Vibrio cholerae 2005

Centers for Disease Control



Ng 2017
Did a PCR on samples using the ITS gene

Ng 2017
Run Gel Electrophoresis to identify if the DNA correctly amplified the DNA

P1
P2
Ng 2017

Our sample
Vibrio
cholerae
Vibrio
marinicus
AGCAACC
AGCAACC
AACAAATC
Ng 2017

All samples that are
classified as *Vibrio cholerae*
repeat the cycle again using
the CTX or cytotoxin gene.

Sequences will be matched
with existing sequences of
other *Vibrio* samples

Ng 2017
Samples sent for
sequencing

Results and Data:

16S gene
13 possible
samples of
V.cholerae

Ng 2017
US.43
US.4
US.47
US.11
US.9
US.46
US.10
US.19
US.59
US.26
US.126

Verification
10 samples
amplified
V.cholerae

Ng 2017

ITS gene
2 verified
samples that
amplified
V.cholerae

Ng 2017

CTX gene
2 samples
amplified,
could not
verify CTX

Ng 2017

Hypothesis

- If I test the suspected *Vibrio cholerae* samples from the Ala Wai Canal, using PCR and Gel Electrophoresis, I will observe that the samples are indeed *Vibrio cholerae* and are cytotoxic.

Conclusion:

- Our hypothesis was partly supported and unsupported due to observing and being able to identify samples *Vibrio cholerae* in our experiment.

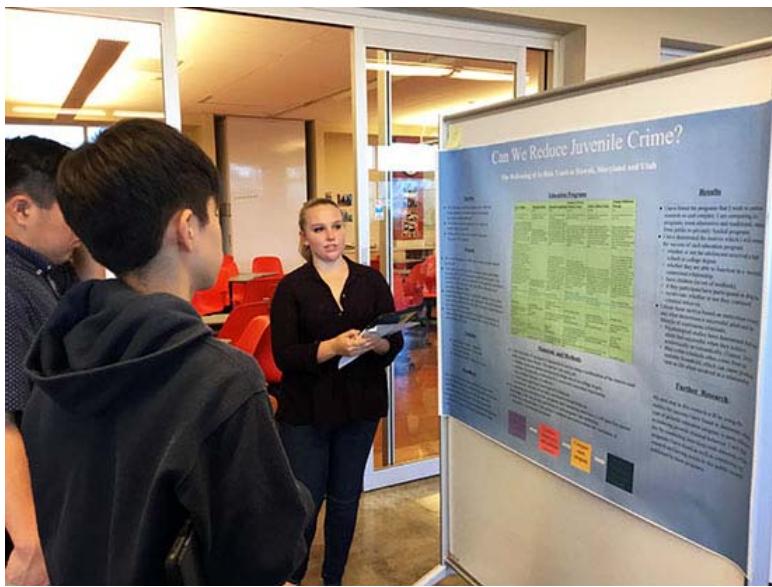
Further Research:

- More Research should be placed on the specific type of *Vibrio cholerae* in the Ala Wai Canal.

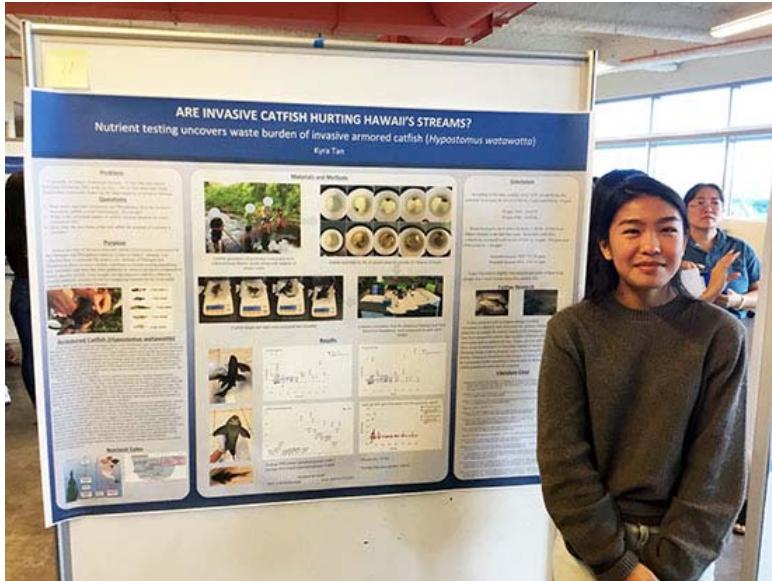
Izabella Sakoda '19, Our Minds Need a Break: How Meditation Affects High School Students, Behavioral & Social



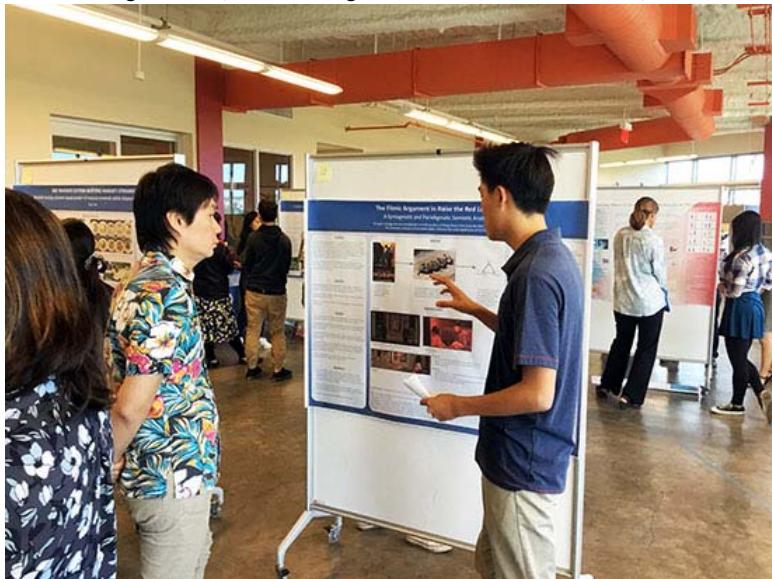
Kimberly Seif '18, Can we reduce juvenile crime? The Well-being of At-Risk Youth in Hawaii, Maryland and Utah , Behavioral & Social



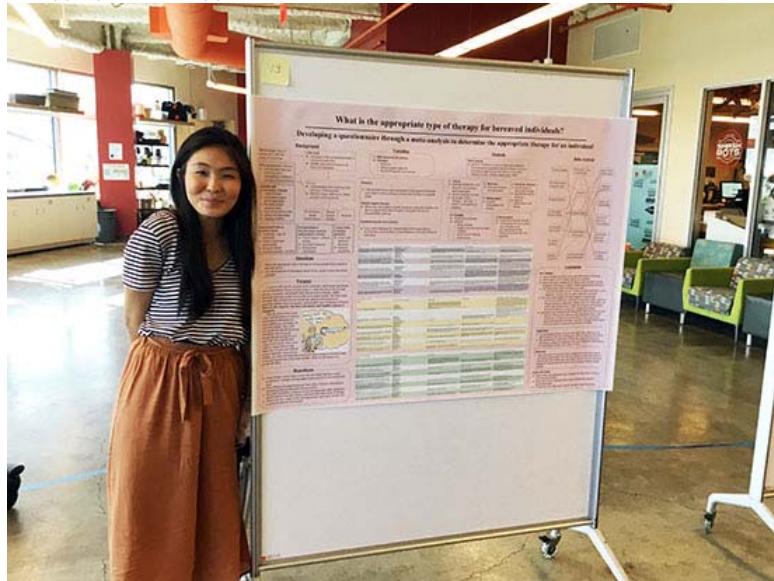
Kyra tan '19, How do invasive armored catfish (*Hypostomus watawatta*)alter water quality, Sciences Biochemistry



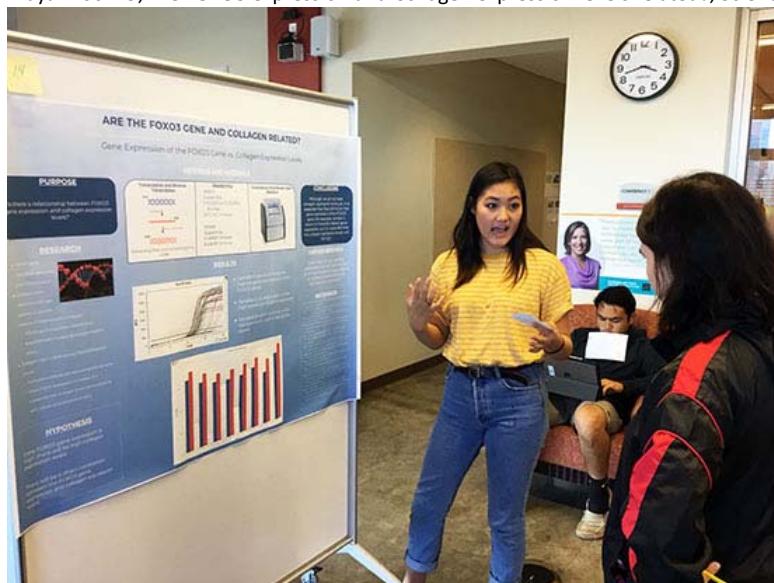
Marcel Truong-Chun '18, The filmic argument in Raise the Red Lantern, Behavioral & Social



Kyani Uchimura '19, What is the appropriate type of therapy for bereaved individuals? Developing a questionnaire through a meta-analysis to determine the appropriate therapy for an individual , Behavioral & Social



Maya Woo '19, Are FOXO3 expression and Collagen expression levels related?, Sciences Biochemistry



Yufei Xiao '19, Angular reconstruction of Galactic Cosmic Rays' origins from muon showers , Physics & Astronomy

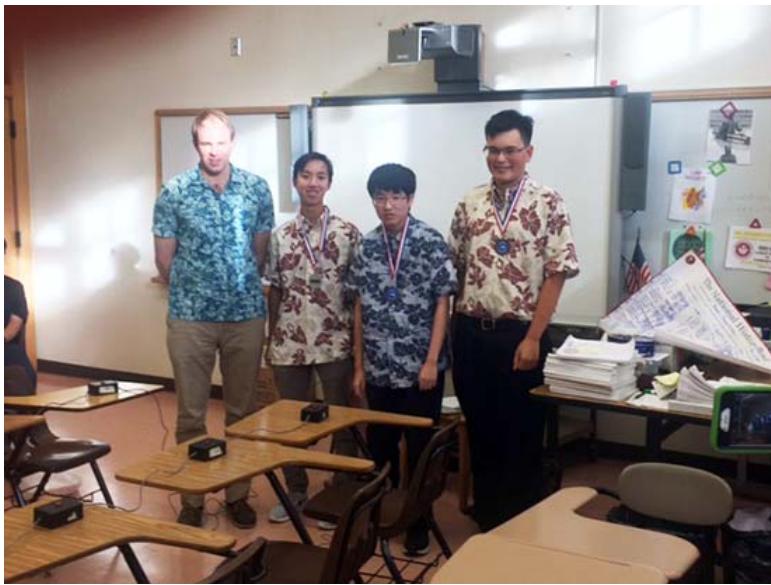


History Bowl

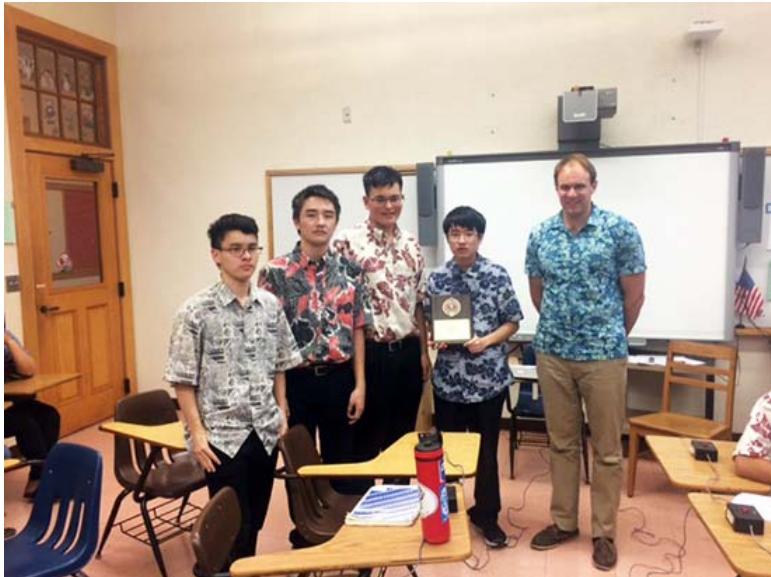
After a year of not competing and a mixed performance at the History Bowl Districts tournament, 'Iolani History Bowl and Bee teams staged a comeback to sweep both State Championship tournaments at McKinley last Saturday. 'Iolani won in a well attended tournament of sixteen teams from seven schools (five private and two public from Waiakea on the Big Isle to 'Oahu.)



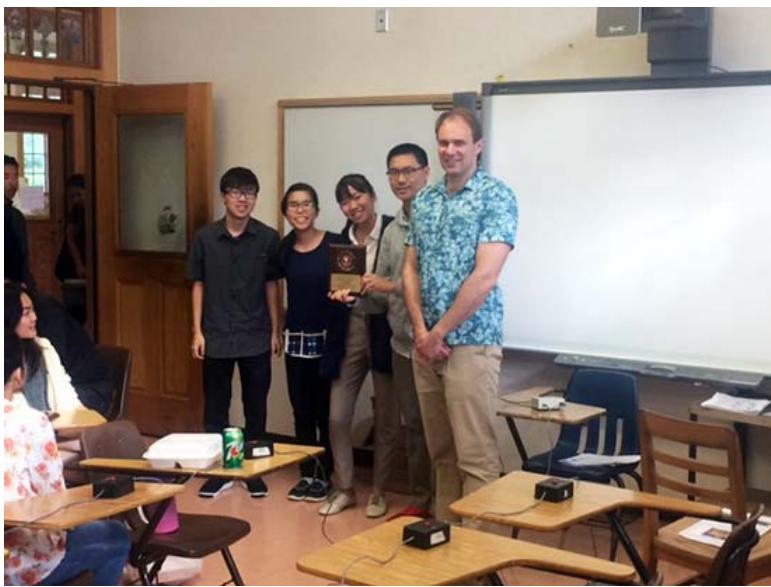
In the Varsity Division individual bee, Matthew Sohn '19 took first, Bryson Choy '18 took second, and William Heyler '19 took third. In the Junior Varsity bee, Brandon Ng '20 won first. Isabelle Chow '20 took second.



In the Varsity Division bowl team event, 'Iolani took first and second. The winning team is composed of Matthew Sohn '19, William Heyler '19, Ethan Burks '19, and Justin Wong '18. In second place were Bryson Choy '18, Claire Shao '18, Brett Hazama Lum '18, and Alec Lazor '18.



In the Junior Varsity Division bowl team event, 'Iolani took first with the team of Brandon Ng '20, Isabelle Chow '20, Mika Ishii '20, and Noah Taniguchi '20. State championship teams (JV and Vars) went undefeated, 6-0 and 8-0 respectively.



Orchestra Outreach

Three Iolani string quartets performed over the weekend at Central Union Church.





Distinguished Young Woman of Hawaii 2018

Xiao Yi Wang Beckvall '18 was named Distinguished Young Woman of Hawaii 2018. She will represent Hawaii in the Nationals in June in Mobile, Alabama. Bethany Lum '18 was the first runner up.



Faculty members Joe Won, Lisa Preston, Molly Hasegawa, and Ernette Au attended the competition and cheered our girls on as they performed in Talent, Self-expression, and Fitness areas to win and take the first runner up spots. Congratulations girls and Go Raiders!

3rd graders visiting Kapahulu businesses

Third graders began their "Mini Society" unit on Thursday with a walking field trip to various businesses along Kapahulu Ave. Each student was assigned a specific business to research. They took note of products/services, signage, pricing, and ways to attract foot traffic. Later, the students will come up with their own business ideas, which will take shape in the months to come, as the young entrepreneurs learn about currency, economics, products and much more. After a few "store days" to work out some details, the unit culminates in March with "Parents Day," when each business opens to hundreds of customers.





The overall goal of "Mini Society" is to take risks, experience the challenges and rewards of being an entrepreneur, think creatively, and contribute in different ways to the community by providing a meaningful business operation.

Young Alumni Day

This past Thursday, more than 50 recent graduates returned to campus for the "Young Alumni College Fair" in Seto Hall. Representing their respective colleges, the alums shared their knowledge with our current seniors and juniors. Mahalo to the graduates who took time out of their Winter Breaks to make this annual event a success.





Sony Open Pro-Jr. Challenge

A promotional graphic for the Sony Open Pro-Jr. Challenge. It features a portrait of a young woman named Kamie Hamada from Iolani School, wearing a white visor with 'Titleist' on it. To her right is the logo for the Hawaii Tourism Authority's Pro-Junior Challenge, which includes a palm tree graphic and the text 'HAWAII TOURISM AUTHORITY PRO-JUNIOR CHALLENGE'. Below this, the event details are listed: 'TUESDAY, JANUARY 9, 2018 - 3:30 PM' and 'WAIALAE COUNTRY CLUB - HOLES 10, 11 & 18'. A descriptive text below states: 'Hawaii's best junior golfers pair with PGA TOUR pros including Marty Dou, Tony Finau, Ollie Schniederjans, Jimmy Walker, and Mark Wilson'.

'Iolani senior Kamie Hamada was selected to be one of five high school students to participate in the 2018 HTA Pro-Junior Challenge at the 2018 Sony Open today (Tuesday, Jan. 9) at Waialae Country Club. The event, which begins at 3:30 p.m., pairs each student-athlete with a PGA Tour professional in an exciting 3-hole challenge. Admission is free and parking is available at Hunakai Park, with shuttles to the main gate. Please consider going out to Waialae to support Kamie and take part in a Q&A with four PGA Tour pros beforehand, from 2:30 p.m. to 3:25 p.m. at the #10 tee bleachers. [Click for more info](#)

All the best in health and happiness,
Tim

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Timothy R. Cottrell, PhD
Head of School
'Iolani School
(m) [808-222-2027](tel:808-222-2027)

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