

9th Annual Research Symposium

Tropical Conservation Biology & Environmental Science



Keynote Speakers:

Dr. James Leary
Thursday 6th

&

Dr. Ruth Gates
Friday 7th

April 6th - 7th 2017

Keynote Speakers

We are very excited to have Dr. James Leary and Dr. Ruth Gates as our keynote speakers for this year's symposium!



Dr. James Leary holds degrees in Horticulture, Chemistry and Molecular Biology from Michigan State University and the University of Hawai'i at Mānoa. He currently serves as Associate Specialist with a split research and extension appointment in the Department of Natural Resources and Environmental

Management at the University of Hawai'i at Mānoa. His mission is to extend knowledge and technology contributing to efficient and effective invasive plant species management. To that end, he enjoys collaborations with a wide range of academic disciplines in biology, engineering, economics, and GIS. His current claim to infamy, is the development of Herbicide Ballistic Technology (HBT) for treating individual weed targets. With this novelty now being deployed operationally, he is becoming more interested in the applied sciences of large data acquisition, performance analytics, quantitative ecology, operations research and management science; all contributing to higher-level tactical and strategic decisions.



Dr. Ruth Gates is a researcher and director for the Hawaii Institute of Marine Biology (HIMB) in Kāne'ohe Bay, O'ahu, a research extension of the University of Hawai'i. Additionally, she serves as the president of the International Society of Reef Studies

(2015-2019). Ruth received her degree in 1984, and a Ph.D. in 1990, both in Marine Biology from the University of Newcastle-Upon Tyne, U.K. Ruth's main research interest lies in the biological mechanisms and traits that drive the ability of marine organisms to respond to changes in their environment. Her current projects examine the underlying mechanisms to responses of coral-dinoflagellate symbioses with respect to their environment, and the evolution and development of animal sensory systems. Ruth integrates methods from biology, genetics, biochemistry and ecology to provide key insight on life strategies of vulnerable marine invertebrates. Her research is aimed at both expanding basic understanding of complex coral reef organisms and identifying novel tools with utility for conserving coral reef ecosystems into the future.

Thursday, April 6th

8:30am *Registration & Refreshments*

9:00am *Welcome & Introduction*

Opening chant by Ku'ula students

UHH Vice Chancellor Dr. Matthew Platz

TCBES Director Dr. Rebecca Ostertag

TCBES Student Club President Erin Busch

9:30am *Keynote Address*

Dr. James Leary

Associate Specialist, University of Hawaii at Mānoa

10:30 *Break – refreshments available*

Session 1: Speed session

10:45 Geneviève Blanchet, UHH TCBES Student

Conservation genetics: Preserving the 'Alala

(*Corvus hawaiiensis*)

10:50 Wade Heller, UH Mānoa

Molecular detection of *Ceratocystis* species infecting 'ōhi'a

10:55 Dr. Jesse Eiben, UH Hilo CAFNRM

The UHH Teaching and Research Arthropod Collection: A

Museum-Quality Natural History Collection and Research

Support Resource

11:00 Marc A. Hughes, UH Mānoa, USDA-ARS

Potential Inoculum for the Rapid Ohia Death Pathogens

11:05 Jessica Kirkpatrick, TCBES Student

The Spatial Distribution of Wēkiu Bugs Within a Cinder Cone on

Maunakea Volcano, Hawai'i

11:10 Joanna Norton, TCBES Student

Can Albizia mulch be used on agricultural land to replace

fertilizer, improve agroecosystem functioning, and provide

climate change mitigation and resilience?

11:15 Nicole Fernandez, TCBES Student

Acoustic Variability of a Native Hawaiian Thrush in a

Fragmented Landscape

Session 2: Poster Session 11:20-12:00

Crystal-lynn Baysa, UH Hilo

Antioxidant and Anti-diabetic Potential of Locally-produced

fruits in Hawaii

Quinn Hamamoto, UH Mānoa

The Seasonal Variation of Phenotype Variability in *Drosophila suzukii* on the Big Island

Wesley Piena, UH Hilo CAFNRM

Diversity and Distribution of Order Odonata in the Hawaiian Islands: Derived from Historic and Modern Records

Caley Saragosa, 'Ike Wai Scholar

Automatic Detection of Miconia with UAV images

Heather Stever, UH Hilo, TCBES Student

Arthropod Diversity Estimates for Three Native Subalpine Plant Species on the Maunakea Volcano in Hawai'i

Julia Stewart, UH Hilo, 'Ike Wai

Metagenomics and metatranscriptomics of the microbial community in diseased and healthy *Montipora capitata*

Dominique R. Zarders, UH Mānoa

Macadamia Felted *Coccid*, *Eriococcus ironsidei*: Biology and Life Cycle in Hawaii

12:00 Lunch; silent auction bidding opens

Session 3: Genomics & Ecological Threats

1:00 Melissa Johnson, Ph.D., Rancho Santa Ana Botanic Garden

A molecular phylogeny of the Pacific clade of *Cyrtandra* (*Gesneriaceae*) reveals a Fijian origin, recent diversification, and a history of long-distance dispersal

1:15 Francis Sakai-Kawada, UH Mānoa

Characterization of secondary metabolite gene clusters in marine sponge-associated *Pseudoalteromonas* on Hawaii Island

1:30 Jeff Stallman, TCBES Student

Mushrooms in Hawai'i: Documenting the *Lepiotaceae* Fungi (*Agaricaceae*)

1:45 Timo Sullivan, TCBES Student, BIISC

Researching the comparative efficacy and efficiency of a low-cost, lay-tech sUAS for detecting multiple invasive species targets

2:00 Julia Stewart, UH Hilo Undergraduate

The UHH Marine Option Program's SeaSTARS

2:15 Movie Previews and Closing Remarks

3:30 Movie: (1hr 36min)

Friday, April 7th

8:30am *Registration & Refreshments*

Session 4: Speed session #2

9:00 Kristina Montoya-Aiona, TCBES Student

Roost Characteristics and Social Behavior of the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*)

9:05 Dominique R. Zarders, TCBES Student

Mechanisms of the possible host shift of Lantana lace bug from Lantana camara to *Myoporum sandwicense*

9:10 Ryan S. Domingo, TCBES Student

Applying meristem-tip culture with thermo therapy to remove viruses from pineapple and taro

9:15 Aryana Henthorne, University of Hawai'i at Hilo

CAW-VERSATION: Variability in 'Alala (Hawaiian Crow) Vocalizations

9:20 Angalee Kirby, TCBES Student

Soil Microbial Community Response To Nitrogen Addition Between Obligate And Facultative Nitrogen Fixation Strategies In Four Tree Species

9:25 Kyle Roy, MS, UH Mānoa

Infectivity of boring dust produced by ambrosia beetles from ROD positive Ohia Trees

9:30am *Keynote Address*

Dr. Ruth Gates

Director for the Hawaii Institute of Marine Biology (HIMB)

10:30 *Break – refreshments available*

Session 5: Diversity & Change

10:45 Jonathan Price, UH Hilo Professor

Disentangling the drivers of species richness in island floras

11:00 Natalie Kurashima, Kamehameha Schools

The potential of indigenous agricultural lands for food production, security, and resilience to climate change

11:15 Jorden A. Zarders, TCBES student

Invasive Arthropod Surveys on UH Managed Lands, Facilities and Vehicles Associated with the Summit Region of Maunakea

11:30 Timothy B. Grabowski, U.S. Geological Survey, Hawai'i

Cooperative Fishery Research Unit

Evaluation of the performance of a low-cost, near 360°-degree camera system to survey reef fishes

11:45 Amelia Dolgin, UH Hilo student

Scanning Electron Microscopy of Phytoplankton: Enhanced preservation and image quality through the use of alternative chemical fixatives

12:00 Lunch Break – refreshments available

Silent auction bidding closes at 1:00pm

Session 6: Discussion Panel; 1:00-2:00

‘Ike ‘Āina: The Challenges and Successes in Conducting ‘Āina-Based Research, Sponsored by Kamehameha Schools

Aunty Hannah Kihalani Springer, Ka‘ūpūlehu & Ka‘ūpūlehu Marine Life Advisory Council (KMLAC)

Uncle Presley Wann, Hā‘ena & Hui Maka‘āinana o Makana

Pua‘ala Pascua, NOAA

Emily Cadiz, Hui Maka‘āinana o Makana

Pelika Andrade, UH Sea Grant & Nā Maka O Papahānaumokuākea

2:00 Break – refreshments available

Session 7: Microbial Biology & Threats

2:15 Mikayla Jones, UH Hilo Undergraduate

Epidemiologic survey of *Staphylococcus aureus* and Methillin-Resistant *Staphylococcus aureus* (MRSA) at beaches in Hilo, Hawai‘i, USA

2:30 Louise M. Economy, TCBES Student

Rainfall driven shifts in *Staphylococcus aureus* in Hilo Bay, Hawai‘i

2:45 Ashley Romeo, TCBES Student

Ecological Predictors of Extinction Risk in Hawaiian Forest Birds

3:00 Closing remarks; Announcement of UHH Student Presenter competition announced; silent auction winners announced

3:30-8:00 Mālama ‘Āina Mixer!

Other Acknowledgments

Big mahalos to these individuals and businesses who have given us discounts or donated items unrelated to the silent auction.

Thank you for making our symposium successful!

Catering provided by: Liko Lehua

Mehana Brewing Company

Pāpaʻa Palaoa Bakery

Sustainable Island Products

9th Annual TCBES Symposium

April 6th-7th 2017 Room: CC301

Front cover art by : Cullen Mandrayar
Back cover art by : Keolohilani Lopes



Special thanks to:

Kamehameha Schools, Natalie Kurashima,
Scott Laursen, Doreen Koizumi, Geneviève
Blanchet, and everyone else
who contributed to making this
event a success!

Event Coordinators:

Erin Busch, Rose Hart, Jessica Kirkpatrick,
Keolohilani Lopes, Becky Ostertag,
Kailey Pascoe, Nathan Stephenson,
and many other volunteers!

