

HIGICC January 2019 Newsletter



NEWSLETTER / January 2019

[2019 Hawaii Surveying and Mapping Conference](#)

HIGICC is pleased to announce our partnership with Hawaii Land Surveyors Association to bring you the Hawaii Surveying and Mapping Conference. The conference will be held on March 21st and 22nd of this year. Check out the conference website at <https://hlsahigicc-conference.com/> for more information and to register today. We want to use this opportunity to introduce surveyors and GIS professionals with the hope of creating new relationships. With this opportunity to network, and discover how we can work together to solve complex issues in the private and public sector. Join us to learn about new technology, workflows and network with colleagues.



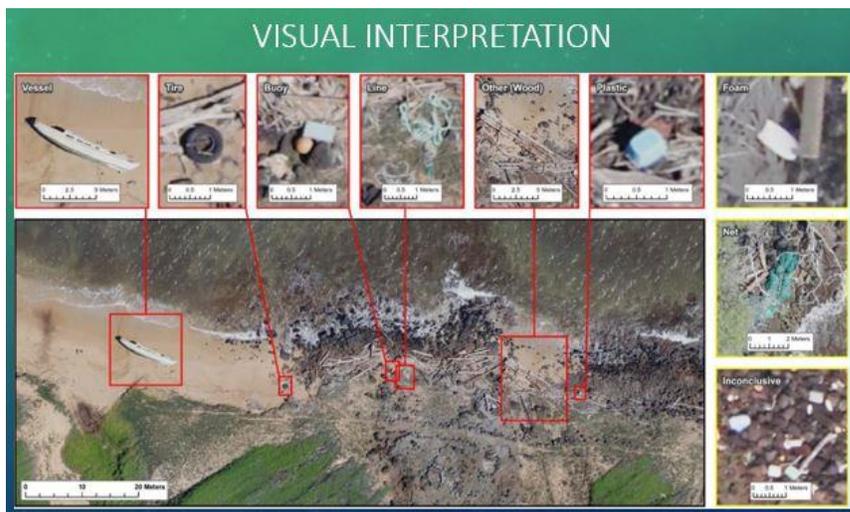
[Garbage In, Marine Debris Info Out: Doing the dirty work of image analysis using machine learning and citizen science](#)

Miguel Castrence, Resource Mapping Hawaiʻi

In 2015 I participated in the first comprehensive marine macro-debris survey for the main eight Hawaiian Islands, This work has been showcased in a [Story Map](#) and a [scientific publication](#) as well as various presentations to local and international audiences. One of the

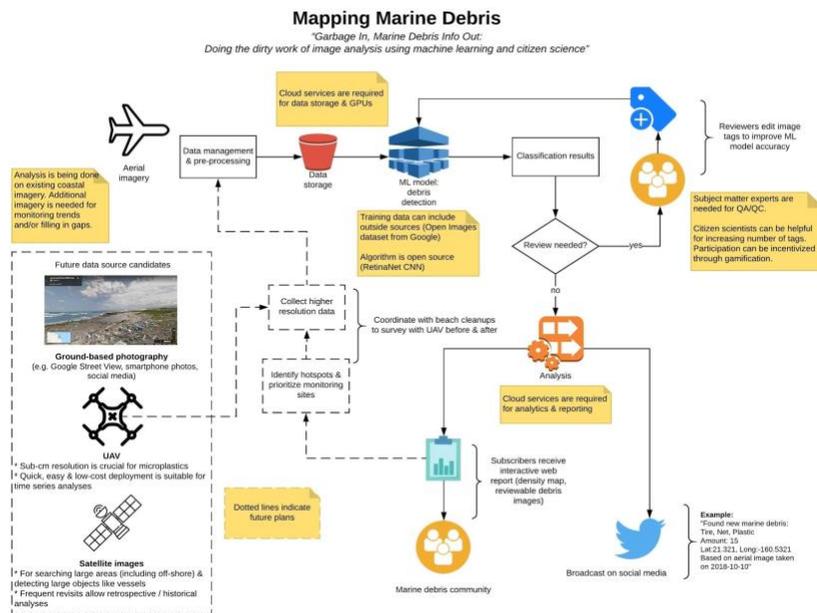
most important outcomes of this project was obtaining permission from our [fundors and partners](#) to use and share this data beyond the scope of the original project.

This summer, I stumbled upon a unique opportunity from [Conservation X Labs Digital Makerspace](#), “a platform where science, entrepreneurship, and technology communities come together to start projects and co-create tech-enabled solutions to conservation problems.” Our proposal was a last-minute submission, yet it was selected as one of [20 finalists](#) to receive a \$3500 micro grant. I roped in a few colleagues and even recruited a couple of software engineers on the Digital Makerspace. The majority of the funds have been dedicated to cloud computing for R&D. We are now competing for the grand prize of \$20,000 which will be awarded in mid-November.



In a nutshell, we are developing a [machine learning \(deep learning\)](#) framework to automate the detection of marine debris in aerial imagery. The 2015 marine debris mapping effort involved 8 analysts at the [Hawai'i Coral Reef Initiative](#) working a total of 688 hours over the course of 3.5 months to analyze 1 TB of imagery covering 1223 miles of shoreline. Now, we are building upon those painstaking efforts to develop training data for artificial neural networks, and we are relying on GPU cloud computing to run the models. The end result will be a tool to expedite the conversion of imagery into information, so that the next time we conduct aerial surveys of the shorelines, we can get results in a matter of days rather than months.

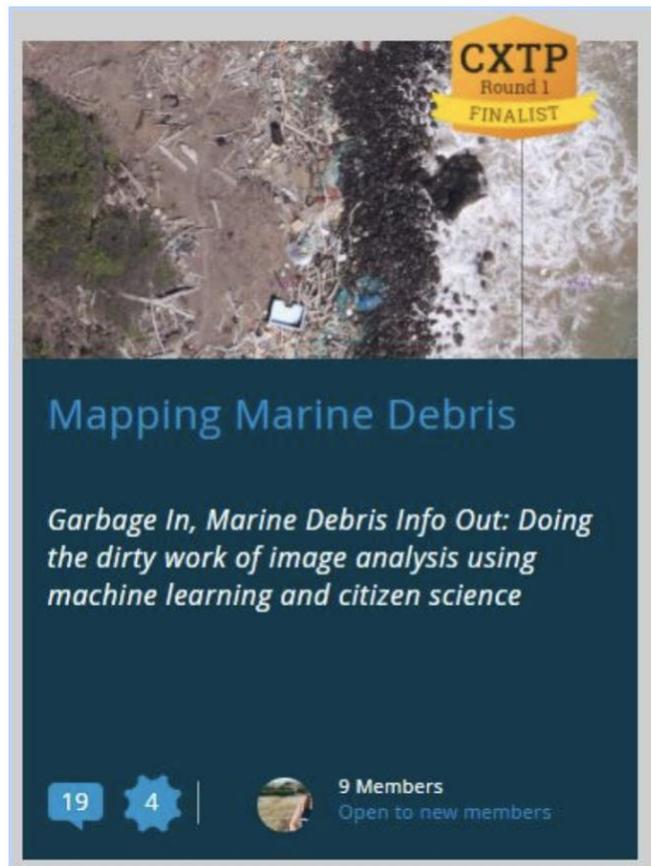
Our goal for this project is to bridge the gap between research and response. We recently met with members of the Hawai'i Marine Debris Action Plan (HI-MDAP) to solicit suggestions and guidance on how to make our research products most useful for them, to identify nonprofit partners to pursue other grants, and to recruit volunteers to help with our analysis. We hope to engage citizen scientists through participation in developing training data as well as collecting UAS imagery. In the near future, we will collaborate with the [Marine Litter DRONET](#) as part of a global effort towards systematic and robust reporting of marine debris.



This open source/open data project is open to new team members! Check us out on the [CXL Digital Makerspace](#) and contact me (miguel@remaphawaii.com) to see how you can contribute.

[Volunteer opportunity: Mapping Marine Debris with Machine Learning and Citizen Science](#)

Volunteers are needed to review aerial imagery to help develop a machine learning framework for mapping marine debris. Check out the project description on the [Conservation X Labs Digital Makerspace](#) and contact Miguel Castrence (miguel@remaphawaii.com) to learn how you can help.



Recap of Annual Meeting

HIGICC held our annual meeting on October 24th this year. We highlighted this year's events which included two very successful GIS Expos held in Hilo and Honolulu, sponsoring the STEM Conference, and awarding a scholarship to Eszter Collier to help her project mapping biological soil crusts and studying their relationship to soil stability. HIGICC partnered with Women in Technology and NOAA to have GIS Day at the Inouye Regional Center out at Ford Island. HIGICC announced the election results and new officers for the next year: Christine

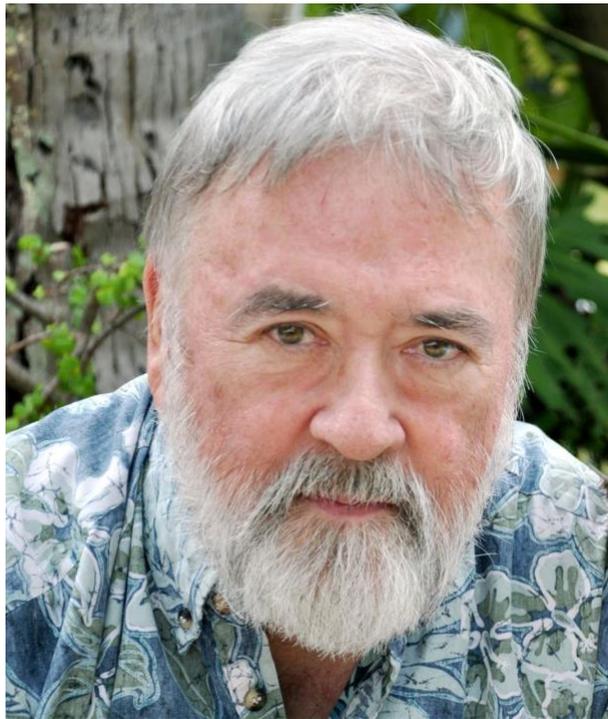
Chaplin, President; Gretchen Chiques, Vice President; Malie Beach-Smith, Treasurer; and Stephanie Saephan, Secretary.

Dr. Everett Wingert

We are sad to share that Dr. Everett Wingert's has passed away. He was honored a few years with the HIGICC president's award and has been a pillar in the Geographic/Cartographic community.

Dr. Everett (Ev) Arvin Wingert, 76, Emeritus Professor of Geography at the University of Hawai'i at Manoa, was born on May 24, 1942 in Cass City, Michigan and passed away on December 19, 2018 in Kailua, Hawai'i, after a long battle with cancer. He was preceded in death by his wife, Jane Eckelman, his father, Arvin Wingert, his mother, Alma Phelps Wingert, and cousins Kenneth Phelps, Yalon Burda, and Paul Phelps. Surviving relatives include first cousins Dale Wingert (wife Patricia), Dean Wingert (wife Phyllis), Marie Jansen, Lyle Phelps, Donald Phelps, Diane Phelps, Arlene McNutt, Brian Phelps, and Ruth Rushlow, brother-in-law John Eckelman, and sister-in-law Carol Cole. Dr. Wingert received his Bachelor's degree from the University of Michigan in 1964, his Master's and Ph.D. Degrees from University of Washington in 1967 and 1973 respectively; all his degrees are in geography. He came to teach in the Department of Geography (now Department of Geography and Environment) at the University of Hawai'i at Manoa in 1971, and retired as an Emeritus Professor in 2016. As a geography professor, he left behind a legacy of being a great, compassionate teacher with an unparalleled bond with his students. Throughout his proud teaching career, he taught thousands of undergraduate students, and advised over one hundred graduate students, serving as the main advisor for several dozens. His foremost specialization was cartography but he also branched out to all aspects of the mapping sciences, including remote sensing, three-dimensional terrain representation, Geographic Information Science and Systems, and most recently mapping with drones. Dr. Wingert is a rare breed among cartography professors. Instead of focusing solely on cartographic theory as others do, he went a step further by designing and producing maps, atlases, map animations and other cartographic products. He believed that cartography must be practiced and that the ultimate effectiveness of mapping must be reflected in its products rather than theories. His academic agenda included not only research, teaching, and service, but also cartographic design and

production. In order to perfect his craft throughout the decades, he studied and learned a myriad of innovative mapping techniques as soon as they were available from technological breakthroughs. Even in the face of rapidly changing technology, he mastered them all and brought them into his curricula for the benefit of his students. His map design skills are among the best in the profession. His teaching and mentoring also helped placed many of his students in the upper echelon of North American cartographers. While his cartographic achievements are too numerous to list, his proud map design and production ranged from the international level such as national atlases of American Samoa, Korea, to those at the federal level, such as maps for the USGS, National Park Service, Army Corps of Engineers, to many state level government mapping projects and the State Atlas of Hawai`i. He also served on National Science Foundation panels, many publication editorial boards, as well as numerous other important and impactful cartographic projects. He was a transformational inspiration to the North American community of professional cartographers. Dr. Wingert will be deeply missed by all those whose hearts he has touched.



Job Announcements

Find links to current job announcements below.

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