

The Leaflet

March 2010

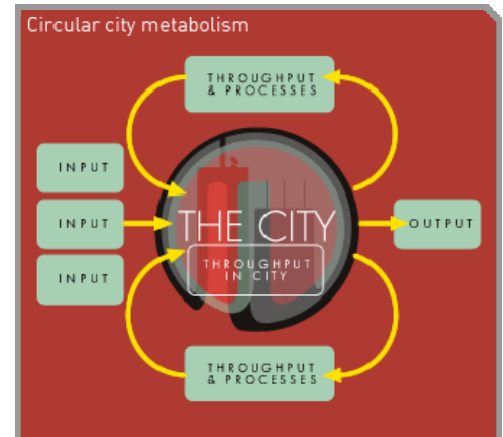


FRONT PAGE

A Study of Two Cities

Image: Courtesy of http://www.makingthemodernworld.org.uk/learning_modules/geography/04.TU.01/illustrations/04.IL.18.gif.

For over 30 years, the National Science Foundation (NSF) has been tracking data from a network of ecological research sites located around the country, called Long-Term Ecological Research (LTER) areas. The LTER network has generated novel and significant results about ecosystems and their structures and functions. For example, the Hubbard Brook Ecosystem Study based in New Hampshire showed that lead levels in that watershed decreased over time as a direct result of legislation which eliminated the use of leaded gas for transportation fuel. With more than half of the world's population now living in urban areas, the NSF is expanding its existing network of LTER areas to include urban sites. These new urban sites will help elucidate the interactions between natural and human systems, as researchers attempt to understand the long-term effects of urbanization on these systems.



The Kohala Center's academic partners at Yale University have received an Urban Long-Term Research Areas – Exploratory (ULTRA-Ex) Award from the National Science Foundation to conduct research on Hawai'i Island. The ULTRA-Ex study will document changes in Hawai'i Island's two urban centers, Hilo and Kona, over the past 200 years. Marian Chertow, Director of the Industrial Environmental Management Program at the Yale School of Forestry & Environmental Studies, is a Principal Investigator for this study, which will look at land-use and land-cover changes in Hilo and Kona over time, in an attempt to understand how these two cities are interacting with their natural environments. The ULTRA-Ex study will document everything that **enters** our human systems, including materials, energy, and water flows, and everything that **exits** our human systems, such as CO₂ emissions and solid waste. Quantitatively measuring these flows will show us exactly what it takes to maintain the functioning of our society, as well as what kinds of waste we are depositing back into the natural system.



Photo: Ezekiel Fugate, a doctoral student at Yale University, will spend the next few years on Hawai'i Island working on the ULTRA-Ex study.

Since the time of European contact in the late 1700s, the Hawaiian Islands have shifted from an essentially closed system, in which no materials were imported to or exported from the islands, to an industrially developed economy which is dependent on a diverse mix of goods and services from around the globe. This shift has resulted in significant challenges related to waste for these isolated islands. Studying human-nature interactions on Hawai‘i Island can help us to understand the existing material, water, and energy flows and, ultimately, help us to realign them in a more sustainable manner. –Ezekiel Fugate, Doctoral Student at Yale University

Read “Understanding Human-Induced Change” on the Back Page.

Our Living Heritage

The best way to prevent local crop varieties from disappearing is to keep them a part of our living heritage. Come and share the tools to help local growers keep traditional varieties of seed in our farms and gardens.
–Alvin Yoshinaga, Center for Conservation Research and Training

Restoring and revitalizing the local seed industry is the goal of the Hua Ka Hua—Restore Our Seed Symposium (see <http://www.kohalacenter.org/seedsymposium/about.html>) on April 17 and 18 at the Outrigger Keauhou Beach Resort in Kona. Farmers, gardeners, and seed experts from around the state and U.S. Mainland will share ways to grow, select, and save high quality seeds for both home and market. Participants will also be invited to help plan a public seed initiative and to collaborate on the development of an open-pollinated organic seed industry on Hawai‘i Island.



Photo: Seeds drying on the kitchen table of Nancy's Redfeather's Kawanui Farm.

The symposium includes a seed swap sponsored by Regenerations Botanical Garden of Kaua‘i, and information booths are available for organizations in attendance. There is no charge for the first twelve organizations that reserve a booth.

Seeds are the germ of nutrition. Cultivation of a local network for sharing seeds and addressing seed issues is key to self reliance for our isolated island community. –Sarah Townsend, Certification Coordinator, Hawai‘i Organic Farmers Association

A free public lecture will precede the symposium from 5:30–7 p.m. on Friday, April 16, at the resort. “The Story of Seed: Wild, Domesticated, Bred, and Engineered—Where Did We Begin and Where Might We Go?” will be presented by Matthew Dillon, founder and director of advocacy for the Organic Seed Alliance, and Frank Morton, owner of Wild Garden Seeds in Philomath, Oregon.

The loss of seed diversity and seed knowledge go hand-in-hand, and such loss poses a risk not only to food security, but to our cultural understanding and well-being. Seed is both the cumulative genetic information that interacts with the environment as crops grow, and a repository of cultural information that holds the story of the co-evolution of humans and plants. The transnational seed industry wants to deny these dual services and benefits we receive from seed and reduce seed to no more than a simple input, analogous to computer coding. The organizers of the Hawai‘i Seed Symposium recognize the true benefits and potential of seed, and are taking an important step to create the foundation of a regional seed system that will improve food sovereignty by reinvigorating the call to steward seeds as a cultural responsibility. Organic Seed Alliance is honored to work with them towards this end. –Matthew Dillon, Organic Seed Alliance

To register for this landmark event, visit <http://www.kohalacenter.org/seedsymposium/registration.html>. Symposium registration is \$100 by March 15, or \$150 after March 15. This cost includes a buffet lunch on both days. The Outrigger Keauhou Beach Resort is offering a special symposium room rate of \$122.53 per night, which includes a daily buffet breakfast. Download a room reservation request at The Kohala Center's Web site at <http://www.kohalacenter.org/seedsymposium/HuaKaHuaOutriggerRoomRes.pdf>.

Beyond the Obvious

Photo: Kekai Edens, 2010 BELL Hawai'i scholarship recipient, swimming along the Kohala Coast.

A graduate of our school, Halena Kapuni-Reynolds, attended the environmental program at Brown University in Rhode Island two summers ago. I remember him telling us about his experiences learning on a boat at sea and participating in activities that helped him to focus on particular leadership skills. He encouraged me to apply because the experience would teach me not only the obvious, you know, how our environment must be cared for...but I could also derive other lessons, for example, to examine myself in terms of my motivations and strengths outside of my home and school. He said that all of it would prepare me for college and how to best serve my community. —Kekai Edens, junior at Ke Ana La'ahana Public Charter School



Thirty ambitious high school students from around the country are headed to Hawai'i Island this April for the week-long Brown Environmental Leadership Lab (BELL) Hawai'i Program. "This program has always been a life-changing experience," says Kohala Center Field Educator and Program Leader Samantha Birch, who is one of four island-based staff who will assist with the 2010 BELL Hawai'i Program. "Students explore the island's unique ecosystems, experience Hawaiian culture, practice their leadership skills, and make lasting friendships during their seven days together," explains Birch.



Students from around the island competed for two coveted scholarship positions for Hawai'i Island residents. The Kohala Center congratulates this year's recipients, Noa Eads, a senior at Honoka'a High School, and Kekai Edens, a junior at Ke Ana La'ahana Public Charter School, who will join the BELL Hawai'i Program on April 2–9, 2010.

Photo: Noa Eads, 2010 BELL Hawai'i scholarship recipient, skateboarding at Waimea Skatepark.

To be part of this amazing environmental experience will enrich my life with both educational and fundamental knowledge—through hands-on learning which my brain is most adapted to absorb. —Noa Eads, senior at Honoka'a High School

Highlights of this year's program include a traditional Hawaiian opening protocol at Halema'uma'u Crater at dawn on the first day, exploring Hawai'i Volcanoes National Park and learning about the geology of our dynamic island, camping at Halau Kukui in Kawaihae, talking story with Chad Paishon about traditional Hawaiian voyaging, kayaking, and marine science activities at Puakō, service work in Ka'ūpūlehu Dry Forest, and a sustainable farm tour in Hilo. Learn more at <http://www.kohalacenter.org/bell.html>.

Better Food

Photo: Students working in the garden at HAAS. Photo by Debra Isabel.

The Hawai‘i Academy of Arts & Science Public Charter School (HAAS) in Pahoehoe was founded in 2001 and currently serves roughly 400 students in grades K–12. The students wanted “better” food than the usual cafeteria fare, and it was their desire to grow food that could be prepared and eaten at school that provided the momentum to launch the garden project. “The garden” was founded on agricultural land on the HAAS middle and high school campus, and HAAS students are now growing, preparing, and eating some of their own food. In addition to food crops, the garden includes sections for growing native crops, seed crops, and nitrogen fixing crops.



The garden is beautiful to view and walk around in. Garden lessons at HAAS include math, science, nutrition, art, and reflective writing, as well as hands-on digging and planting. Some delicious produce has been cultivated and shared, and much more is on the way. –Chioke Mims, HAAS Garden Teacher

In 2009, HAAS joined The Kohala Center’s Hawai‘i Island School Garden Network (HISGN), a community of 52 gardens and a few thousand gardeners working in schools around the island. Learn more about The Garden at HAAS on the Back Page.

Experience the Uncommon



Photo: Richard Spiegel examining a frame of honeycomb being filled with honey by the bees.

The Kohala Center group will learn about Volcano Island Honey Company (VIHC), a business with an uncommon philosophy. I will explain how we practice this philosophy through our commitment to organic, social, and environmental practices and discuss the challenges we face as a small business which is based on values and not just the bottom line. I will also share information about honeybees and the very real threat to their survival, both locally and worldwide, and explain the broader implications of this threat for humans and for the planet. The group can expect to have a lively interchange with me. –Richard Spiegel, Volcano Island Honey Company

Learn more about the current state of agriculture, beekeeping, values-based business, Volcano Island Honey's success as a values-based business, and threats to bees worldwide and in Hawai‘i. Friends of The Kohala Center are invited to experience “Beekeeping and Volcano Island Honey” with Richard Spiegel on Saturday, March 20, from 10 a.m. to 1:30 p.m.

Richard Spiegel received his formal training as an attorney and was a member of the Bar of the United States District Court for the District of Columbia. In 1970, Richard left the practice of law to travel and explore a “subsistence” lifestyle. After four years on the Canadian-Washington State border, living in sub-zero temperatures with no electricity or running water, a chain saw injury motivated Richard to relocate to Hawai‘i to heal. In 1977, he founded what would later become the Volcano Island Honey Company, here on Hawai‘i Island. Over the years, Richard cultivated his beekeeping hobby into an art, and in 1993, he left his position as executive director of the

West Hawai‘i Mediation Center to become a full-time beekeeper. Today, the unique gourmet honeys produced by the Volcano Island Honey Company are marketed around the world.

Photo: Two bees taking a rest break before they get back to work and move on to the next flower.

To register for this or other Learning Events, contact The Kohala Center at info@kohalacenter.org or 808-887-6411. The cost is \$25 per event for current Friends of The Kohala Center, or \$75 for new Friends. To learn more about The Kohala Center’s Circle of Friends, visit <http://www.kohalacenter.org/join.html>.



The Transformation of Hawaiian Land Tenure



Photo: Keanu Sai.

In celebration of King Kamehameha III Kauikeaouli’s birthday, the *Puana Ka ‘Ike* (Imparting Knowledge) lecture series proudly presents “Kamehameha III and the Transformation of Hawaiian Land Tenure” featuring Dr. Keanu Sai. Dr. Sai’s talk is scheduled for Friday, March 12, from 5:30–8 p.m., in the Bayview Meeting Rooms at the Sheraton Keauhou Bay Resort & Spa.

Dr. Keanu Sai, whose research focuses on international relations and public law, will recount the events that transformed Hawai‘i’s land tenure system during the reign of His Hawaiian Majesty King Kamehameha III. Dr. Sai will discuss the establishment of the Board of Commissioners to Quiet Land Titles; the Great *Mahele* (Division) between the Government, Chiefs/*Konohiki* (land stewards), and the Native Tenants; and the meaning of the clause “reserving the rights of native tenants.” The audience will also have the opportunity to view the documentary *Ua mau Ke Ea: Sovereignty Maintained* and to ask questions of Dr. Sai.

Keanu Sai received his Ph.D. in political science from the University of Hawai‘i at Mānoa in 2008. His doctoral research focused on the legal and political history of Hawai‘i from Kamehameha I to the present. Before receiving his Ph.D., Sai was a land title abstractor and one of the principles of Perfect Title Company. He currently teaches political science and Hawaiian studies at Kapi‘olani Community College. He is the author of numerous journal articles, and two of his books will be soon be published by the University of Hawai‘i Press.

This *Puana Ka ‘Ike* lecture is sponsored by Kamehameha Investment Corporation, Hui Kaha Pōhaku & Kia‘i ‘Āina Kualoia of Keauhou-Kahalu‘u Education Group, Kamehameha Schools, Royal Order of Kamehameha I, Daughters of Hawai‘i, Betty Kanuha Foundation, Kaniohale Community (Homesteaders) Association, and The Kohala Center. For more information, a schedule of upcoming lectures, and videos of previous lectures, visit <http://kohalacenter.org/puanakaike/about.html>.

The Message Is: Innovate!

In the current economy, nonprofits are laying off staff, cutting back programs, and many are actually closing down. Those nonprofits that are continuing to thrive—and The Kohala Center is blessed to be among them—are those:

(1) that understand that the need for their services is rapidly evolving;

(2) that are very attuned to local, regional, and national conditions;

(3) that continue to provide excellent value;

(4) that analyze and evaluate quickly and move with decisiveness in launching new efforts or closing down those that are ineffective in serving their community; and

(5) that communicate rapidly within their organization, with their partners, and with the public.

In times like these, we must innovate. Business as usual no longer works. Nonprofit organizations like The Kohala Center can move very quickly to meet the dramatically new challenges facing our society. Indeed, nonprofits constitute the innovation sector of our economy and society. –Matt Hamabata, Executive Director, The Kohala Center

In the spirit of innovation, The Kohala Center has embraced the world of social networking. We now have our own Facebook and Twitter pages. These pages are a place for us to highlight upcoming events, post photos, announce new partnerships, and share news about the good work being done by our friends.

Photo: This is what harvested chocolate looks like, a photo from our recent Chocolate Growing and Candy Processing member event. See more photos of this event on our Facebook page at <http://www.facebook.com/album.php?aid=389711&id=332755470354>.

Here's an example of a recent post on our Facebook page:

“Humans could reduce global warming, but it's unclear at this point whether we will do what's needed. - key statement from the Yale Project on Climate Change. Executive Director Matt Hamabata recently spoke with friends from Yale's School of Forestry & Environmental Studies (F & ES). They just published a study that has gained national attention regarding the public's attitudes toward carbon emission policies and energy issues. Learn more about the Yale F & ES Project on Climate Change at <http://environment.yale.edu/climate/>.”

If you haven't yet visited our Facebook page, we invite you to go to <http://www.facebook.com/pages/The-Kohala-Center/332755470354?ref=nf> and connect with the latest news from TKC.



The Art of Listening

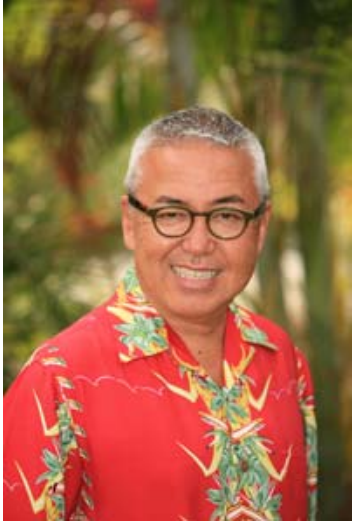


Photo: Matt Hamabata, Executive Director of The Kohala Center.

Matt Hamabata, the executive director of The Kohala Center, was recently selected by *Hawaii Business* magazine as one of Hawai‘i’s next generation of movers and shakers. Hamabata is profiled in the magazine’s March issue, “20 for the Next 20,” as one of 20 up-and-coming leaders. Hamabata has guided the growth of the organization from its bare-bones founding in January 2001 to a \$4.1 million organization in eight years.

“I am truly honored and truly surprised by this award,” Hamabata said. “But I feel the honor should go to the residents and community leaders of Hawai‘i Island—all I am doing is listening first to the needs of island residents and then making sure that I listen to the guidance of island leaders about how to meet those needs. This award is a testament to the pragmatic, creative, optimistic, and ambitious people of Hawai‘i Island. They are leading, and I am following.”

Hamabata was born and raised in Hanapepe, Kauai, and is a graduate of Mid-Pacific Institute in Honolulu. He received his undergraduate degree at Cornell University and an M.A. and Ph.D. from Harvard University. He first taught at Yale University, served as the dean of Haverford College, and was the director of learning at the California Endowment. He is professor emeritus at the Fielding Graduate University, a former Fulbright-Hays Fellow, and a recipient of the Literary Award of the Athenaeum of Philadelphia. Hamabata received the Ho‘okele Award in 2009 from the Hawai‘i Community Foundation and Wallace Alexander Gerbode Foundation, which recognizes nonprofit leaders in Hawai‘i who are making a difference in our community.

Understanding Human-Induced Change

By Ezekiel Fugate, Doctoral Student at Yale University

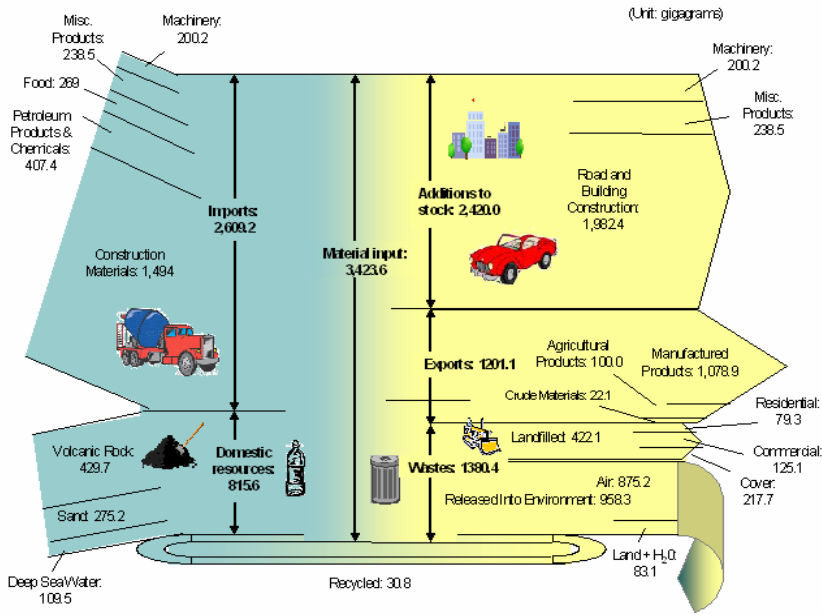


Image: Preliminary overview of material flows for Hawai'i Island (Houseknecht et al. 2006).

Hawai'i is particularly conducive to the study of human-nature interactions because the Hawaiian Islands are bounded and isolated systems with an incredible amount of biotic diversity. Material, water, and energy flows in Hawai'i can be tracked with a high degree of accuracy. Further, the islands have undergone significant socioeconomic and ecological transitions over the past century as a result of the establishment of statehood, the rise and fall of the sugar industry, the growth of the tourist industry, and the introduction of a number of invasive species, among other factors. Here on Hawai'i Island, there is a strong dependence on imports and economic diversity is limited.

Hawai'i Island's two urban centers, Hilo and Kona, have marked biogeochemical contrasts. Hilo on the wet, windward side of the island is one of the rainiest urban centers in the nation, while Kona on the dry, leeward side of the island receives nearly 13 times less rainfall in a typical year. Nevertheless, the two cities have similar water consumption rates, leading to groundwater depletion and pumping, treatment, and storage issues in Kona.

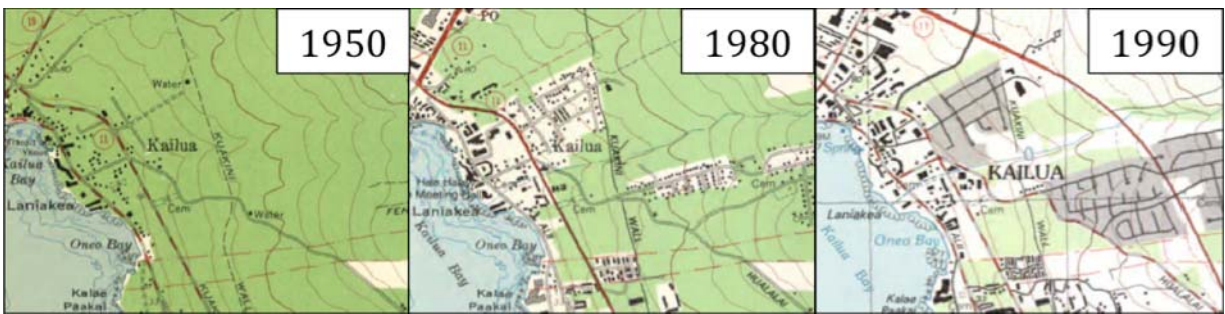


Image: Land cover changes in Kailua-Kona since 1950 (USGS).

Hilo and Kona are also markedly different with respect to many socioeconomic variables (See Table 1). Over the past two decades, Hilo has struggled to establish a diversified economic base following the demise of the sugarcane industry and plantation economy. Kona's explosive growth, fueled by its attractiveness as an international tourist and second-home destination, has limited its economic resilience and severely strained existing infrastructure. We anticipate that Hilo and Kona will be characterized by fundamentally different resource requirements and landscape modifications, and the ULTRA-Ex study will help us quantify these differences. By studying changes in Hilo and Kona over time, we hope to gain a better understanding of what it will take to steer Hawai'i Island in a more sustainable direction in the future.

Table 1. Overview of Hilo and Kailua-Kona characteristics (Census 2000; State of Hawai'i Data Book).

Parameter	Hilo	Kailua-Kona
Area (km ²)	140.6	103.0
Population (2009)	43,738	31,699
Population increase since 2000	6.4%	19.0%
Cost of living over U.S. average	22.3%	62.9%
Avg. annual precip. (mm)	3,300	250
Avg. winter / summer temp. (°C)	21.1 / 23.9	18.9 / 29.4
Demographic breakdown	17% White, 38% Asian, 13% Pacific Islander, 32% Other or Combined	39% White, 18% Asian, 13% Pacific Islander, 30% Other or Combined

Photo: Hilo Bayfront.

The ULTRA-Ex project will study changes in two core areas: socioeconomic metabolism and the dynamics of land-use and land-cover change.

The socioeconomic metabolism component is divided into four key areas of analysis: material inputs, material outputs, energy, and water. Material inputs include all materials that enter the socioeconomic systems of Hilo and Kona, such as food (both imported and locally grown), construction materials (both imported and locally extracted), and packaging materials. Material outputs include all materials that exit the socioeconomic systems of Hilo and Kona, such as municipal solid waste, recycled glass (which eventually becomes an input), and gaseous emissions to the environment. The energy area includes both primary inputs and end-use demands. The water area examines drinking water, wastewater, irrigation water, and recycled water.



Photo: Aerial view of Hilo.

The land-use and land-cover component of the project is using both remotely-sensed and GIS data to track changes over time. For example, we are using satellite imagery to quantify the amount of agricultural land that has been converted into residential or commercial land.

Based on the diverse and comprehensive nature of this project, gathering data can be quite a challenge. We are using a combination of public databases (e.g., economic trade data, utility records, emissions inventories, NASA Landsat images), private and public reports, on-the-ground data gathering, and estimations when adequate data is not readily available. For historical data, we are relying on public and private records, archival sources, and anecdotal accounts. We are also working to digitize and analyze a number of historical maps. In cases where no data exists, it is possible to use information about existing technologies and per capita trends to reconstruct resource flows.

Photo: Historic photo of the Kona Inn. Photo courtesy of <http://uechi.typepad.com/.a/6a00d8341d471653ef011570376555970b-pi>.

The ULTRA-Ex project is the first manifestation of the Long-Term Industrial Ecosystem-Hawai'i Island (LIEM-Hawai'i) effort and, as such, it will serve as a model for future projects. The LIEM-Hawai'i project will monitor and inform resource management issues on the island for at least two decades.

The ULTRA-Ex project is a collaboration of the Center for Industrial Ecology at Yale University's School of Forestry and Environmental Studies, The Kohala Center, and the Institute of Pacific Islands Forestry (IPIF). Marian Chertow and Karen Seto, researchers from Yale, bring an expertise in metabolic and land-use/land-cover change analyses; Kamana Beamer, representing TKC, is an expert in historical geography and Hawaiian studies; and Christian Giardina, representing IPIF, is a research ecologist.



Photo: Kamana Beamer, 2008–2009 Mellon-Hawai'i Fellow (<http://kohalacenter.org/mellon/about.html>) and collaborator in the ULTRA-Ex study, at the launch of the LIEM-Hawai'i Project on May 21, 2009.

As with previous projects, we are working closely with County agencies, including the Department of Water Supply and the Department of Environmental Management. Throughout the project we will be consulting island residents and soliciting input and feedback. This ensures that our work is not only accurate, but also relevant to issues and concerns on the island.

Some of the issues that fall within the purview of this project are the limited waste assimilation capacity of the island, the extremely high energy costs on the island, and the discard of valuable resources that could be beneficially reused. We hope that our efforts to identify, quantify, and summarize material and energy flows at a regional level will provide headline indicators that can be used by the County.

On March 7–14, twelve Yale industrial ecology students, mostly master's candidates from the School of Forestry and Environmental Studies, will be conducting research on Hawai'i Island under the direction of Professor Marian Chertow. The students are divided into four teams focusing on issues of energy, water, material inputs, and material outputs. While on the island, they will meet with a variety of individuals and organizations including County officials, representatives from private companies, and community members. Their main task will be gathering data that they will then analyze. The students will also be introduced to cultural and socioeconomic issues in the islands.

We are currently in the process of searching for funding opportunities to expand the reach of the ULTRA-Ex project. We are interested in studying resource flows not just from an urban level, but also from the *ahupua'a* (watershed), island, and archipelago levels. For example, O'ahu may be importing construction materials from the Mainland that could partially be substituted for by recovered materials from Hawai'i Island. However, without an integrated analysis of resource flows, this opportunity will remain untapped. As we seek to live more sustainability on the land, understanding multi-level and multi-scale flows is essential for sound decision making.

The Garden at HAAS

By Chioke Mims, Garden Teacher

Photos by Debra Isabel

Photo: Transplanting peppers.

The vision of HAAS is to foster a community of learners. School families joined together to donate plants and composting materials to establish the garden. A Hawaiian Nutrition Education Network grant opportunity helps to fund my position as a part-time garden coordinator.

As the garden has evolved over the past nine years, its potential to serve as a focal point for student and community learning is now being realized. We have begun to host recipe sharing and cooking lessons for members of the community, and more such activities are being planned. Interest in the school garden is growing as beautiful vegetables and fruits are produced.



Photo: Students involved in a pest management lesson.

Students recognize the connection between the garden and the sources of the food they eat, and they are also beginning to understand the work that it takes to cultivate a garden. There are many challenges including weather, pests, and time. Of course, the students also need to learn how to work. Managing a school garden is challenging!

Students work in the garden as an elective class, or as part of a work training program, or as a community service project—which is a graduation requirement at HAAS. As new sections of the garden are developed, we label them accordingly. For example, we now have areas devoted to native crops, seed crops, and nitrogen fixing crops.

Photo: Identifying pests on garden plants.

Some of the food grown in the garden has been used to provide school snacks. As the food sources in the garden expand, more food is available to be used in school lunches. For example, we are now harvesting and serving sweet potatoes, *kalo* (taro) leaves, green beans, eggplants, cabbages, and green onions from the garden.

Recycled paper and cardboard from the school is utilized for weed maintenance. This material also provides an ideal environment for worms. Large composting projects are also supported by the broader HAAS school community, and these projects help us to keep excess green waste out of the County landfill.





Photo: Recycling paper by layering it beneath mulch.

We are currently working to expand the garden to include a shade and green house, a large open plot, and a future 2.5-acre garden area, which is being cleared and cultivated for the production of cash crops. HAAS is poised to begin generating income by selling produce! A small animal husbandry project has also been started, and our CORD, or construction elective class, is building chicken tractors. As the garden project expands, students in this class will help construct animal shelters and farm structures, as needed.

Photo: Students feed garden pests to the HAAS chickens.

Networking with The Kohala Center's HISGN (Hawai'i Island School Garden Network) has allowed us to share ideas and best practices with an island-wide community of school gardeners. The information and connections we make through HISGN are of great value to all involved.



Photo: Students work on creating a fish tank at HAAS.

Due to financial shortfalls in the State Department of Education and for charter schools in particular, donations of equipment, plants, seeds, compost, garden attire, and funding are needed and welcomed. HAAS is continuing to develop its pool of volunteers, and our door is open to people who have time to invest in the garden. Volunteer farmers who are able to share their knowledge and experience with the students are also welcomed. **As we all know, many hands are what it really takes to make a garden thrive and provide!**

Donors or potential volunteers can call HAAS at 965-3730 and leave a message for Chioke, or e-mail her at yahdahfoods4383@aol.com.

