



UNDERGRADUATE RESEARCH AND CREATIVE WORK

**Honors Program
&
Undergraduate Research Opportunities Program**

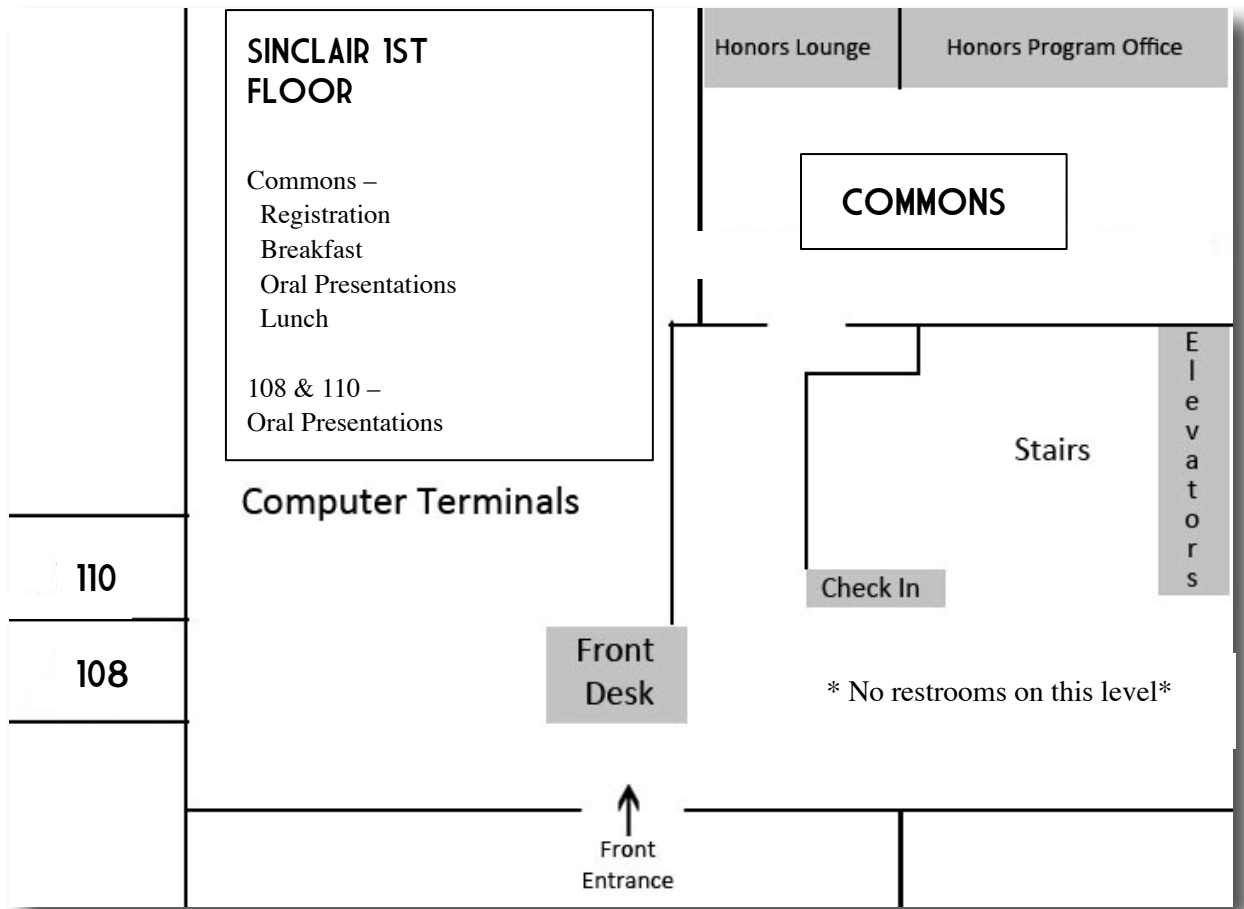
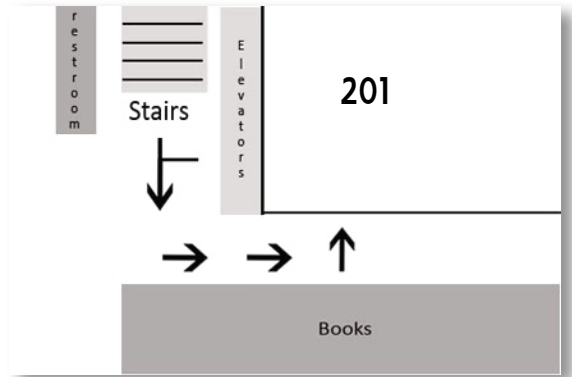
December 3, 2011 ■ 7:45am to 2:30pm

**Sinclair Library
Honolulu, Hawai'i**

SCHEDULE

TIME	ACTIVITY	LOCATION
7:45-8:15am	Registration and Breakfast Poster Set-up	Commons Heritage Reading Room
8:15-8:30am	Opening Ceremony	Commons
8:30-10:15am	Oral Presentations Session One	Breakout Rooms
10:15-10:30am	Break	
10:30-11:30am	Poster Presentations	Heritage Reading Room
11:30-11:45am	Break	
11:45am-1:15pm	Oral Presentations Session Two	Breakout Rooms
1:30-2:30pm	Lunch and Award Presentations	Commons
2:30-2:45pm	Participants Remove Posters	Heritage Reading Room

SINCLAIR 2ND FLOOR
 201 - Oral Presentations



BREAKOUT ROOMS

ORAL PRESENTATIONS SESSION ONE 8:30 - 10:15

108	Natural Sciences Projects
110	Social Sciences Projects
201	Social & Natural Sciences
Commons	Arts & Humanities

POSTER PRESENTATIONS
10:30 - 11:30
HERITAGE READING ROOM

ORAL PRESENTATIONS SESSION TWO 11:45 - 1:15

108	Natural Sciences Projects
110	Social Sciences Projects
201	Social Sciences Proposals

ORAL PRESENTATIONS SESSION ONE
8:30-10:15AM

108 NATURAL SCIENCES PROJECTS

- 8:30 Dylan T.B. Ressler Rate of Degradation of Land Snail Shells in Hawaiian Tropical Environments
- 8:45 Torsten Hall Durkan Micromollusk Sampling: Evaluating Field Survey Techniques in Hawai'i's Tropical Forests
- 9:00 Kelsey L. Coleman The Impact of the Invasive Freshwater Snail *Pomacea Canaliculata* on Restoration Efforts in Kawainui Marsh
- 9:15 Celeste Yee Describing the Reproductive Behavior of *Pila Conica* Under Varying Light Cycle and Temperature Conditions

110 SOCIAL SCIENCES PROJECTS

- 8:30 Nicole Cacal The Ease of Doing Business Index Among APEC Economies
- 8:45 Max Hamermesh The Sales Impact of the Cash for Clunkers Program
- 9:00 Katlyn M. Daoust Television Viewing, Internet Use, and Fastfood Consumption by Students at the University of Hawai'i at Mānoa.
- 9:15 Rosa Pascua Monitoring the Use of "Non-Medical Supplementation" of Exclusive Breastfeeding Infants at Discharge on the Postpartum Unit
- 9:30 Tyler Heston Computational Modeling of the Emergence of Word Order Preferences in Typologically Different Languages
- 9:45 Hadas Zachor The Effects of Incarceration on Experiences of Childbirth and Pregnancy Among Former Hawai'i Inmates

**ORAL PRESENTATIONS SESSION ONE
8:30-10:15AM**

201 SOCIAL & NATURAL SCIENCES PROPOSALS

8:30	Almas Rawji	Nature vs. Nurture: The Continuing Debate Over Personality
8:45	Jane Chesmore	Intricate Responses: Approaches to Death and Comfort for Dying Children
9:00	Jonah A. Preising	Determining Appropriacy: ESL Materials in Vietnam Field Study Reflections and SARS
9:15	Amy Shigemitsu	Examining Perspectives of Online Counseling
9:30	James W. Akana Murphy	Invasive Algal Mats Induce Hypoxia in Hawaiian Coral
9:45	Ruel Reyes	Testing the Ability of DNA Markers to Resolve Species Boundaries
10:00	Taryn Takebayashi	A Phylogenetic and Morphological Comparison of C and K Corpuscles in New and Old World Ampullariids (Apple Snails)

COMMONS ARTS AND HUMANITIES PROJECTS

8:30	Jenna Leigh Saito	"Two Weeks to Live"
8:45	Tim Dominguez	"When I Wake" by Tim Dominguez
9:00	John Cameron McClain	Ghosts, Robots and Things In-Between: A Florilegium
9:15	Bonnie Sheehy	An Aesthetics of Experience: John Dewey, Maurice Merleau-Ponty, and Zen
9:30	Maria Aurora P. Deguzman	Remembering Hawai'i Statehood in Hawai'i's English-Language Newspapers: How Biased Newspaper Coverage Affects Historical Narrative Creation
9:45	Julianna Sumida	The Evolution of Portuguese and Brazilian Art Song: A Survey from Origins to Nationalism

Poster Presentations
10:30-11:30am - Heritage Reading Room

Arts & Humanities Posters

Maria Aurora P. DeGuzman	Remembering Hawai'i Statehood in Hawai'i's English-Language Newspapers: How Biased Newspaper Coverage Affects Historical Narrative Creation
Tim Dominguez	"When I Wake"
John Cameron McClain	Ghosts, Robots and Things In-Between: A Florilegium
Jonah A. Preising*	Determining Appropriacy: ESL Materials in Vietnam Field Study Reflections and SARS Adaptation of EFL/ESL Materials
Jenna Leigh Saito	"Two Weeks to Live"
Bonnie Sheehy	An Aesthetics of Experience: John Dewey, Maurice Merleau-Ponty, and Zen
Julianna Sumida	The Evolution of Portuguese and Brazilian Art Song: A Survey From Origins to Nationalism

Natural Sciences Posters

Paige Baum	Social, Entomological, and Clinical Factors Influencing the Transmission and Prevention of Chagas' Disease in Rural Andean Ecuador
Kelsey L. Coleman	The Impact of the Invasive Freshwater Snail <i>Pomacea Canaliculata</i> on Restoration Efforts in Kawainui Marsh
Kelsie DiPerna	Cryptofauna Community Composition on Coconut Island in Kāne'ohe Bay
Torsten Hall Durkan	Micromollusk Sampling: Evaluating Field Survey Techniques in Hawai'i's Tropical Forests
Danielle Kiele Hoen	Compound Specific Isotope Analysis in Food Web Studies: The Need for Accurate Estimates of Trophic Enrichment Factors
James W. Akana Murphy*	Invasive Algal Mats Induce Hypoxia in Hawaiian Coral
Dylan T.B. Ressler	Rate of Degradation of Land Snail Shells in Hawaiian Tropical Environments
Ruel Reyes*	Testing the Ability of DNA Markers to Resolve Species Boundaries
Laura Sheldon	The Effects of Radiance on Tree-ring Formation in <i>Metrosideros Polymorpha</i>
Taryn Takebayashi*	A Phylogenetic and Morphological Comparison of C and K Corpuscles in New and Old World Ampullariids (Apple Snails)
Celeste Yee	Describing the Reproductive Behavior of <i>Pila Conica</i> Under Varying Light Cycle and Temperature Conditions

Poster Presentations
10:30-11:30am - Heritage Reading Room

Social Sciences Posters

Nicole Cacal	The Ease of Doing Business Index Among APEC Economies
Jane Chesmore*	Intricate Responses: Approaches to Death and Comfort for Dying Children
Katlyn M. Daoust	Television Viewing, Internet Use, and Fastfood Consumption by Students at the University of Hawai'i at Mānoa
Gabriel A. El-Swaify	Low-Cost Water Supply Technologies for Humanitarian Assistance Missions
Benjamin Field	Homegardens of Ometepe, Nicaragua
Avi Gillett*	Chinese State Capitalism: Competitive Advantage of Investment in Developing Nations
Max Hamermesh	The Sales Impact of the Cash for Clunkers Program
Zach Hannah*	Keeping the Landscape Sacred in Highland Bolivia
Tyler Heston	Computational Modeling of the Emergence of Word Order Preferences in Typologically Different Languages
Matthew Hom*	Examining Tenant Issues For Micronesian Migrants in Oahu Public Housing
Casey Jones	Ethnobotanical Investigations on Ometepe Island, Nicaragua
Larry K. Martin	A Student-Built Nanosatellite for Use in Radar Calibration
John Thornton O'Connor*	Fishhook Distributions and Early Polynesian Settlement
Rosa Pascua	Monitoring the Use of "Non-Medical Supplementation" of Exclusive Breastfeeding Infants at Discharge on the Postpartum Unit
Randall Perez*	From Outreach to Arson: A Critical Look at the Contemporary Animal Rights and Environmental Movement
Almas Rawji*	Nature vs. Nurture: The Continuing Debate Over Personality
Amy Shigemitsu*	Examining Perspectives of Online Counseling
Marisa C. Watanabe	Down-scaling Climate Change Adaptation: A Framework for Cultivating Community Resilience Processes
Hadas Zachor	The Effects of Incarceration on Experiences of Childbirth and Pregnancy Among Former Hawai'i Inmates

**proposal*

**Oral Presentations Session Two
11:45am-1:15pm**

**108
Natural Sciences Projects**

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|-------|---------------------|--|
| 11:45 | Laura Sheldon | The Effects of Radiance on Tree-ring Formation in <i>Metrosideros Polymorpha</i> |
| 12:00 | Kelsie DiPerna | Cryptofauna Community Composition on Coconut Island in Kāne'ohe Bay |
| 12:15 | Danielle Kiele Hoen | Compound Specific Isotope Analysis in Food Web Studies: The Need for Accurate Estimates of Trophic Enrichment Factors |
| 12:30 | Paige Baum | Social, Entomological, and Clinical Factors Influencing the Transmission and Prevention of Chagas' Disease in Rural Andean Ecuador |

**110
Social Sciences Projects**

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|-------|----------------------|--|
| 12:00 | Benjamin Field | Homegardens of Ometepe, Nicaragua |
| 12:15 | Casey Jones | Ethnobotanical Investigations on Ometepe Island, Nicaragua |
| 12:30 | Marisa C. Watanabe | Down-scaling Climate Change Adaptation: A Framework for Cultivating Community Resilience Processes |
| 12:45 | Gabriel A. El-Swaify | Low-Cost Water Supply Technologies for Humanitarian Assistance Missions |
| 1:00 | Larry K. Martin | A Student-Built Nanosatellite for Use in Radar Calibration |

**Oral Presentations Session Two
11:45am-1:15pm**

Learning Annex 2 (Room 201)
Social Sciences Proposals

11:45	Randall Perez	From Outreach to Arson: A Critical Look at the Contemporary Animal Rights and Environmental Movement
12:00	Matthew Hom	Examining Tenant Issues for Micronesian Migrants in Oahu Public Housing
12:15	John Thornton O'Connor	Fishhook Distributions and Early Polynesian Settlement
12:30	Avi Gillet	Chinese State Capitalism: Competitive Advantage of Investment in Developing Nations
12:45	Zach Hannah	Keeping the Landscape Sacred in Highland Bolivia

ABSTRACTS

Abstracts of paper and poster presentations are listed in alphabetical order of presenter's last name. Information below the name includes the student's major, the purpose of their presentation, the category of their presentation, and whether they are presenting a poster and/or an oral presentation. The faculty mentor, if appropriate, is listed below the abstract.

Paige Baum
Anthropology and Microbiology
Completed Project
Natural Sciences
Honors Program
Oral: 12:30pm, Rm. 108

Social, Entomological, and Clinical Factors Influencing the Transmission and Prevention of Chagas' Disease in Rural Andean Ecuador

Few studies have been conducted on the relationship between social factors and prevention strategies associated with *Trypanosoma cruzi* transmission in the Andes. In this six component interdisciplinary investigation a retrospective cohort, cross-sectional, descriptive study was performed in order to: estimate prevalence using entomological and serological evidence, estimate seroprevalence in order to assess risk of congenital transmission and chronic disease, and, guided by medical anthropology, identify social factors that influence perceptions and attitudes towards Chagas' disease in rural Andean Ecuador. Information was gathered, as part of ongoing longitudinal study by Ohio University's Tropical disease institute via domestic and peridomestic searches, testing for serological evidence of infection, participant observation, interviews and focus groups. The participants of this study were faculty and students from Ohio University's Tropical Disease Institute Summer Research Program, faculty and students from Pontifica Universidad Católica del Ecuador, trained field workers of Servicio Nacional de Enfermedades Transmitidas por Vectores Artrópodos, members of thirteen rural communities in Loja Province, patients of the maternity ward and cardiac wing of San Isidro Ayora Hospital. In total, the data from 354 houses, 949 subjects in community, ~200 expectant mothers, 120 cardiac patients, 8 interviews, 6 focus groups and 45 heads of household was included. Through entomological surveying an infestation index of 13.5% was found. A 1.4% seroprevalence of antigens associated with Chagas' infection was found through serological screening of rural community members. In the mothers testing a 1% seropositivity was estimated. Of the cardiac patients tested, 2.5% of the tests from subjects were seropositive. Health, social and physical living conditions, education, economy and security were some of the predominant topics of concern revealed in participant observation, interviews, and focus groups. In conclusion, prevalence, identification of risk and social factors in Ecuador influence the transmission dynamics of *T. cruzi*. An understanding of these factors and their relation to *T. cruzi* transmission is crucial for improving the control of vector transmission of Chagas' disease.

Mentor: Sheri Gon

Nicole Cacal
Finance and International Business
Work in Progress
Social Sciences
Honors Program
Oral: 8:30am, Rm. 110

The Ease of Doing Business Index Among APEC Economies

In 2003, the World Bank Group first published an annual survey that ranks more than 180 of the world's economies, measuring their regulatory environment related to the ease of starting and operating a business. These rankings are called the Ease of Doing Business Index, which are based upon ten different categories. Examining these areas allow governments to have an objective view of their economy's health and potential business opportunities for their citizens. In 2009, the Asia-Pacific Economic Cooperation launched their Ease of Doing Business Action Plan (2010 – 2015), aimed at improving five of the ten categories by 2015. This paper investigates these specific categories in the five top ranked economies in APEC, which are Singapore, Hong Kong (SAR, China), New Zealand, the United States, and South Korea. In addition to the use of scholarly journals, I will also utilize data published by the World Bank. By analyzing these economies, I will conclude which areas enabled them to be ranked favorably and discuss which areas pose as a challenge.

Mentor: Dr. Denise Konan

Jane Chesmore
General Arts and Sciences
Project Proposal
Social Sciences
Honors Program
Oral: 8:45am, Learning Annex 2 (201)

Intricate Responses: Approaches to Death and Comfort for Dying Children

Admittance into hospice care means it's the final stage of life before the patient passes away. Every adult hospice patient understands that with their illness or injury, death will be the ultimate end to their time here on earth. However, how can death be explained to a *dying* child? My research project focuses on how death can be explained to terminally ill and critically injured children with emphasis on the positive aspects of afterlife through religion. I will also explore how children psychologically and emotionally handle their situation concerning death and how they cope with that understanding socially. I will research child psychology and gain insight on how cognitive skills develop with age. This may explain why children in different age groups have an easier or more comfortable time understanding death than others. I will study ages three to five, six through eight, and nine through twelve. After the bulk of my analytical research I will travel to a hospice center and coordinate a leisurely activity day for the children where we will have biblical activities that will focus on the positive concepts of afterlife such as Heaven. The emotional well-being of a patient can positively or negatively affect their health, therefore I will gather anonymous records of blood pressure an hour before the activity and an hour after to see if the child's emotions (happiness, relief, and comfort) had any positive impact on their basic health.

My goal for this research project is to be able to help family members as well as those working in children's hospice facilities to be able to explain death to a dying child in a positive manner, for example through religion, so that the patient's journey through their illness or injury will be comforted rather than anxious.

Kelsey Coleman
Botany
Work in Progress
Natural Sciences
Undergraduate Research Opportunities Program
Oral: 9am, Rm. 108

The Impact of the Invasive Freshwater Snail *Pomacea Canaliculata* on Restoration
Efforts in Kawainui Marsh

The freshwater apple snail *Pomacea canaliculata* (Gastropoda: Ampullariidae) is an invasive species first recorded from Hawai'i in 1989 that has spread throughout freshwater systems in the state. It is a voracious herbivore that causes substantial ecosystem damage where it is introduced. Understanding the snail's feeding preferences and behavior will inform conservation and restoration efforts in areas where the snail is present (e.g. Kawainui Marsh, O'ahu). Using a series of laboratory feeding trials I will be determining the potential impacts of *P. canaliculata* on wetland restoration efforts aimed at the removal of non-native plants and the reintroduction of native species. During summer and fall 2011, ten non-native and two native plant species found in Kawainui Marsh were offered to individual snails in no-choice trials. Plants consumed most often and at the highest rate were then used in pair-choice feeding trials to determine preference. Preliminary results indicate that invasive aquatic floating succulents *Salvinia molesta*, *Pistia stratiotes*, *Eichornia crassipes*, and the semi-aquatic *Bacopa monnieri* are preferred over grasses and sedges, including *Typha latifolia*, three species of the genus *Cyperus*, and *Schoenoplectus californicus*. The only native preferred species is *Bacopa monnieri*. If restoration efforts are focused on aquatic invasives, the feeding preferences of *P. canaliculata* may shift to plants like *Bacopa monnieri*, though both native and invasive grasses will still be less preferred. Furthermore, the removal of *Typha latifolia* and *Schoenoplectus californicus* during restoration will probably have little impact on the feeding behavior of *P. canaliculata*.

Mentor: Dr. Ken Hayes

Katlyn Daoust
Communication
Completed Project
Social Science
Honors Program
Oral: 9:00am, Rm. 110

Television Viewing, Internet Use, and Fastfood Consumption by Students at the
University of Hawai'i at Mānoa

Relevant literature provides support for the argument that fast food companies recognize television and the internet as the most successful means for reaching consumers. Additionally, the transitional nature of college increases students' susceptibility to fast food advertising strategies because of the amount of time they spend engaging in television watching and internet usage (Knutson, 2000). Thus, this study examined the relationship between frequency of fast food consumption and the amount of time spent watching television and using the internet among a sample of 315 undergraduate students at the University of Hawai'i at Mānoa.

Mentor: Dr. Sandra Wu

Maria Aurora P. Deguzman
Communicology and American Studies
Completed Project
Arts & Humanities
Honors Program
Oral: 9:30am, Commons

Remembering Hawai'i Statehood in Hawai'i's English-Language Newspapers: How
Biased Newspaper Coverage Affects Historical Narrative Creation

The overthrow of the Hawaiian Monarchy in 1893 set off a series of events that ultimately resulted in Hawai'i becoming known as the 50th state of the United States. One of the last of these events was a referendum, a vote by residents of Hawai'i, on the Hawai'i Admission Act that was signed into law by President Eisenhower in 1959. Given only the choice of accepting the act and becoming a state, or rejecting it and remaining a territory, an overwhelming majority voted in favor of the act. Over 50 years later, Hawaii Statehood remains controversial due to a belief that Hawai'i never legally became a state and that it has been illegally occupied by the United States since 1898. Although there is a consensus among scholars that the two main English-language newspapers in Hawai'i were biased in favor of Hawai'i Statehood, there is little scholarship on how this media bias affects the public's memory of this event.

I hypothesize that by influencing the public to vote in favor of the Hawai'i Admission Act the newspaper media also affected the creation of Hawaii Statehood's historical narrative. Through careful analysis of the Honolulu Advertiser and the Honolulu Star-Bulletin with regards to coverage of Hawai'i Statehood from the signing of the act into law until one week after the referendum, this study aims to determine how these newspapers informed the public about the issues of Hawaiian sovereignty and statehood and the narrative they created for Hawai'i Statehood.

Mentor: Dr. Jang Kim

Kelsie DiPerna
Biology
Completed Project
Natural Sciences
Undergraduate Research Opportunities Program
Oral: 12:00pm, Rm. 108

Cryptofauna Community Composition on Coconut Island in Kāneʻohe Bay

A vast amount of the biodiversity on coral reefs comes from cryptofaunal organisms living within the coral skeleton. This diverse community serves many functional roles, including bioerosion and nutrient cycling, critical to the persistence and success of coral reefs. In this study, we sampled the cryptofaunal community on the edge of Coconut Island in Kāneʻohe Bay to determine variation in cryptofaunal community composition. Samples of dead *Porites compressa* were collected along an onshore to offshore transect within a single reef. Cryptofaunal organisms were extracted from the dead coral skeleton and sorted by phyla. We calculated the Shannon-Weiner Index of each sample to determine if there were any trends in diversity, evenness, abundance, and richness across the transect. Higher species richness was found on the reef flat than the reef slope. We also compared the cryptofaunal community composition from this study to a similar study by White (1980) conducted in north Kāneʻohe Bay. In the light of many environmental shifts in Kāneʻohe Bay since the 1970s when cryptofaunal communities were last studied, this is the first study to examine the differences in community composition that have occurred in the last thirty years. We found that the total number of infaunal worms was 7 times higher in this study than in White's study; polychaetes were the dominant taxa in both studies. Also, nematodes were more prevalent in this study, contributing to 15% of the total community composition at Coconut Island compared to only 1% in north Kāneʻohe Bay.

Mentor: Dr. Megan Donahue

Tim Dominguez
English
Completed Project
Arts & Humanities
Honors Program
Oral: 8:45am, Commons

“When I Wake” by Tim Dominguez

“When I Wake” follows the life of a young man and his surreal journey into the true final frontier: the depths of the human mind. Growing up without a father, he naturally depended on his mother, a curandera (Native medicine woman), and they shared a powerful bond. She had instilled in him invaluable lessons about the world, as we know it, and the alternate reality that exists in the mind. He took these lessons to heart, and mastered the art of lucid dreaming: the ability to consciously control one’s dreams.

When he loses his mother, he soon discovers that her death holds the key to a malevolent force that is threatening the lives of the few people in his life that he has left. Now it is up to our hero to find the truth about his mother’s death and combat the dangerous forces that have left him alone in an unforgiving world. He will use the skills that he has mastered in lucid dreaming, and in the process discover the symbiotic nature of waking life and the dream world. Only by risking his life can he hope to save the ones he loves from a doomed fate.

This work explores the dangers of overindulgence, the power of the human mind and the value of courage, righteousness, and love. “When I Wake” takes us through an intense journey into an arcane world often overlooked, and provokes questions about our existence and what defines reality.

Mentors: John Rieder & Maile Gresham

Torsten Hall Durkan
Biology
Work in Progress
Natural Sciences
Undergraduate Research Opportunities Program
Oral: 8:45am, Rm. 108

Micromollusk Sampling: Evaluating Field Survey Techniques in Hawai'i's Tropical Forests

The Hawaiian Islands harbor diverse land snail communities with >750 species and 99% endemism. Extinction estimates are as high as 90% for some families of Hawaiian land snails. However, lack of empirical data exists to accurately assess the extent of snail biodiversity loss. Terrestrial micromolluscs constitute a considerable proportion of the snail fauna in many habitats. Due to their small size and soil-leaf litter habitat, micromolluscs are often overlooked or underestimated in surveys. Two methods are commonly used for surveying land snail populations in the field: timed visual sampling and soil collection followed by sieving. Historically, surveys in Hawai'i exclusively employed visual sampling. It is less labor intensive than sieving and enables covering greater areas with limited resources, but may underestimate biodiversity. To better evaluate the conservation status of Hawaiian land snails, we are developing a combined protocol that more accurately assesses land snail biodiversity. Three areas on O'ahu, each harboring native snails in diverse habitats were used as experimental sites for surveying micromolluscs. Sampling involved a comparative 30-minute visual search in a 10 m² area followed by sieving of leaf litter and topsoil from four 0.3 meter quadrates. Preliminary data indicate that species diversity may be underestimated by up to 20% using only the visual survey method. Using the most effective sampling approach during surveys is crucial for understanding land snail distributions, life histories, taxonomy, and developing conservation management plans. A combined visual and sieving approach may be necessary to accurately document the remaining snail species in Hawai'i.

Mentor: Dr. Robert Cowie

Gabriel A. El-Swaify
Civil Engineering
Work in Progress
Social Sciences
Undergraduate Research Opportunities Program
Oral: 12:45pm, Rm. 110

Low-Cost Water Supply Technologies for Humanitarian Assistance Missions

The objective of this research was to set up a slow sand filter system large enough to meet the household water needs of several families (i.e. 90 gallons per day) and to study its purification effect using water collected from Mānoa stream as feed water. This water was stored in three 200 gallon reservoirs, and with a peristaltic pump, passed through two 55 gallon drum sand beds. The beds were first set up in series and later in parallel. To further improve the water purification of the system, carbonized coconut shells, silver impregnated activated carbon, and ultraviolet radiation (UV) methods were investigated. The pH, temperature, turbidity, specific conductance, total organic carbon (TOC), total coliform, and E. Coli, water were tested over time. It was found that TOC, turbidity, total coliform and E. Coli were greatly reduced with passage through the slow sand system. Further reductions may occur with the development of the biolayer (schmutzdecke) on the surface of the sand.

In conclusion, the slow sand filter system is an effective tool in converting poor-quality surface water into water usable for household purposes (i.e. washing clothes, dishes, and bodies). The results from this experiment further suggest that a slow sand column is appropriate for use in developing countries where clean water is a necessity, but is oftentimes in short supply.

Mentor: Chittaranjan Ray

Benjamin Field
Ethnobotany
Completed Project
Social Sciences
Honors Program & Undergraduate Research Opportunities Program
Oral: 12pm, Rm. 110

Homegardens of Ometepe, Nicaragua

An ethnobotanical field school was completed from July 22-August 16 under Dr. Mark Merlin and Laura Shiels, MS. This field school took place at the Maderas Rainforest Conservancy on the island of Ometepe, Nicaragua, in the town of San Ramon. The main component of this field school was an ethnobotanical research project. My research project aimed to identify the most common medicinal and edible plants occurring in the local home gardens. Students of the San Ramon elementary school were asked to list 20 plants that were growing in their yards. Baisel (*Ocimum basilicum*) and Lemmon Grass (*Cymbopogon citratus*) were found to be the most common plants occurring in local home gardens. Small sample size, large nomenclature of species, and the language barrier were the largest sources of bias in the results. Time was the largest limiting factor. In return for the student's help, a small fenced garden was constructed in the school with the consent of the teacher. Lessons were given to students on how to keep the garden running. The field school also reviewed topics in ethnobotanical methodology and ethics, along with lessons on ecology, cultural biogeography and natural products. Students also increased their familiarity with the Spanish language.

Mentor: Dr. Mark Merlin & Laura Shiels, M.S.

Avi Gillett
Chinese
Project Proposal
Social Sciences
Honors Program
Oral: 12:30pm, Learning Annex 2 (201)

Chinese State Capitalism: Competitive Advantage of Investment in Developing Nations

The need to study the People's Republic of China's state sponsored capitalism is essential to understanding and forecasting its growing influence in the geopolitical and global economic spheres. The capitalism practiced by Communist China, is significant in its implications to the future of competitive investment ventures in emerging markets. Chinese commercial success could be viewed as a menace to the sovereignty of less financially successful nations, or beneficial to them. However, China's nascent economic ascendancy appears to threaten the equilibrium of competitive viability within the global marketplace. While domestically, Chinese capitalism is less competitive than its Western counterpart, internationally it displays a resilience and advantage not previously exhibited in the global market. It is possible that governmental control and State sponsorship may account for its greater success and diminished vulnerability.

This study will utilize current academic investigations into China's Outward Foreign Direct Investment, published in scholarly journals. Attention will be given to the historical development of State Capitalism in China, with a view to illuminating its previous advancement and influence on politically motivated Outward Foreign Direct Investment. During this analysis four case studies will be developed to understand competitive advantages, and opportunities, in emerging markets. This examination will survey the effects of political influence on rival investment ventures, and assess what measures might be implemented to equalize competition. Equipped, with this examination's conclusions, politicians, economists and entrepreneurs, may be better prepared to advance their interests globally.

Mentor: Professor Wang

Max Hamermesh
International Business and Management
Completed Project
Social Sciences
Honors Program
Oral: 8:45am, Rm. 110

The Sales Impact of the Cash for Clunkers Program

In response to the global financial crisis of 2008, the United States implemented a number of stimulus programs to aid economic recovery. The Cash for Clunker program was a government stimulus program that offered consumers a credit of up to \$4,500 towards the purchase of a new vehicle in the summer of 2009. The program aimed to increase the number of new vehicle sales and the fuel efficiency of these new vehicle purchases. The program accounted for a total of 677,842 new vehicle purchases from July 1, 2009 to August 24, 2009, with a total of \$2.85 billion in credits given to consumers. The study uses an ordinary least squares regression model containing Canadian and United States vehicle sales information to determine the effect of the program, and determine its net gain. The study also analyzes 143,998 consumer surveys that were completed during the program to determine the effect of the program on consumers buying habits. From the results, the study concludes that the Cash for Clunker program did stimulate the sales of new automobiles in the United States during the program; however, did not significantly stimulate new sales of light trucks. In addition, the sales gained during the two months of the program were forfeited from future months suggesting that the program's overall economic impact was negligible.

Mentor: Sumner Lacroix

Zach Hannah
Anthropology
Project Proposal
Social Sciences
Honors Program
Oral: 12:45pm, Learning Annex 2 (201)

Keeping the Landscape Sacred in Highland Bolivia

For thousands of years indigenous Bolivians have regarded their landscape as sacred. As development projects and global political forces cut further into rural areas, their environmentally destructive forces contradict the ideology of a sacred landscape, threatening the livelihood of Bolivia's indigenous people and ecosystems. Recognizing how Bolivians maintain their ideology of a sacred landscape in the face of global economic pressure is crucial in elevating their indigenous perspective within relevant international debates, and this is my underlying objective. My method relies on previous ethnographic research that suggests traditional patterns of land use, such as communal agriculture, reflect indigenous ideologies that uphold the land as sacred. Under this premise, preservation of the sacred landscape ideology is proportional to the prevalence of traditional patterns of land use. Utilizing observational fieldwork, interviews with community members, and archival data - each in the highland Bolivian communities of Obrajes and Iruma, I will be able to gauge the prevalence of traditional land-use patterns, and thus recognize how indigenous Bolivians maintain their ideology of the sacred landscape, and in effect, their lives and precious resources.

Mentor: Christine Beaulé

Tyler Heston
Interdisciplinary Studies
Completed Project
Social Sciences
Undergraduate Research Opportunities Program
Oral: 9:30am, Rm. 110

Computational Modeling of the Emergence of Word Order Preferences in
Typologically Different Languages

As anyone who has spent time studying a foreign language knows, gaining fluency in another language takes years of dedication and hard work. Language is full of complexities of all sorts, including complexities in sounds, words, sentences and larger discourse units. However, infants seem to have an incredible ability to pick up whatever language they are exposed to. How is it that children are able to acquire language with such ease?

While many answers have been proposed to the above question, the present research follows a line of study that examines the statistical properties of language as a potential factor in its acquisition. Could the frequencies with which words occur together be one factor that aids children during the process of acquisition? To seek an answer to this question, we have observed the frequencies of words and word pairs in a large corpus of language data.

The research methodology has entailed writing computer simulations to extract frequency statistics from the corpus. The observed statistics are then compared with the internal linguistic structure of the sentences. It is expected that the more frequently two words occur together, the more likely they are to form a tightly-knit phrasal unit. The study examines both forward probabilities, which are calculated moving forward from word to word, and backward probabilities, calculated in the opposite direction. The study begins with the statistical characteristics of English, later turning to the application of the same methodology to a language with a very different word order, namely, Korean.

Mentor: Luca Onnis

Danielle Kiele Hoen
Global Environmental Science
Completed Project
Natural Sciences
Undergraduate Research Opportunities Program
Oral: 12:15pm, Rm. 108

Compound Specific Isotope Analysis in Food Web Studies: The Need for Accurate
Estimates of Trophic Enrichment Factors

Ecosystem-oriented fisheries management strategies require knowledge of trophic relationships. Trophic position (TP) estimates from compound specific nitrogen isotopic analysis of amino acids (AA-CSIA), although promising, have not been thoroughly tested. TP estimates from AA-CSIA require knowing β , the difference in $\delta^{15}\text{N}$ values between glutamic acid and phenylalanine in primary producers and Δ , the ^{15}N enrichment at each trophic step or trophic enrichment factor. Values of β (3.4‰) and Δ (7.6‰) have been suggested for aquatic environments, however recent observations indicate that Δ may be variable particularly among elasmobranchs. We determined Δ values for three species of sharks, sand tiger (*Carcharias taurus*), lemon (*Negaprion brevirostris*), and leopard sharks (*Triakis semifasciata*), and one teleost species, opakapaka (*Pristipomoides filamentosus*) grown on semi-controlled and well characterized diets for durations ranging from three (*Triakis semifasciata*) to ten years (*Pristipomoides filamentosus*). We found the Δ values for both elasmobranchs and opakapaka were significantly lower than the Δ value of 7.6‰ previously reported. These differences may be due to carnivorous feeding strategies in elasmobranchs and teleosts.

Mentor: Brian Popp

Matthew Hom
Anthropology
Project Proposal
Social Sciences
Honors Program
Oral: 12:00pm, Learning Annex 2 (201)

Examining Tenant Issues For Micronesian Migrants in Oahu Public Housing

Contemporary population estimates for Micronesian migrants in Hawai'i range between 10,000 and 20,000 individuals. Aided by rights outlined in the Compact of Free Association, Micronesian individuals may travel freely within U.S. territories and utilize U.S. social services. Many Compact migrants come to Oahu seeking educational, medical, and employment opportunities unavailable in their nations of origin. However, once in Hawai'i these migrants face many problems including housing accessibility, contributing to a large number of Micronesians who are homeless or reside in transitional shelters. While a small body of information has been established on Micronesians in Oahu homeless shelters, little is known about individuals living within public housing. This research investigates the causes of social, economic, and administrative issues faced by Micronesians within Oahu's public housing system. Issues have been noted to arise from cultural differences and difficulties communicating with housing administrations. Through volunteer work with the advocacy group, Micronesians United, an understanding of common problems faced by migrant tenants will be established to serve as a starting point for further research and policy development. As the state of Oahu directs limited government funds to assist a growing population of Micronesian migrants a better understanding of problems these individuals face must occur to ensure these funds are utilized effectively. More effective aid to Micronesian migrants will allow these funds to better address Oahu's citizens as a whole.

Mentor: Dr. Susan Wurtzburg

Casey Jones
Ethnobotany
Completed Project
Social Sciences
Undergraduate Research Opportunities Program
Oral: 12:15pm, Rm. 110

Ethnobotanical Investigations on Ometepe Island, Nicaragua

Ethnobotanical investigations were conducted on the island of Ometepe, Nicaragua, in order to help prevent further loss of both bio-diversity and cultural diversity. The island is geologically comprised of two large rainforest-covered volcanoes isolated at the center of a massive freshwater lake in tropical Central America. The residents of Ometepe live on the lowland slopes of the volcanoes and still use many wild plants for food and medicine. Non-native plant crops are being introduced to the island and are intruding on the native plant species and the native cultural practices associated with these species. In this research, a small group of participants and their households were interviewed. They were asked to identify 16 fresh plant samples, comprised of half native plants and half non-native plants. It was found that native plants were identified more often than non-native plants by a margin of 12%. Ethnobotanical uses of all species were also recorded for preservation of cultural traditions. Analysis suggests that though there is a strong presence of a unique native culture, introduced plant species continue to contribute to diversity loss. A collection of over 60 plants were dried, photographed, and made into voucher specimens to support the research. These specimens were then submitted to the National Herbarium of Nicaragua for further research and analysis. To help support local rainforest conservation efforts, tree and sapling data was gathered for a local student who was researching for an organization titled; “Reducing Emission by Deforestation and Forest Degradation” or REDD.

Mentors: Dr. Mark Merlin and Laura Shiels, M.S.

Larry K. Martin
Electrical Engineering
Work in Progress
Social Sciences
Undergraduate Research Opportunities Program
Oral: 1:00pm, Rm. 110

A Student-Built Nanosatellite for Use in Radar Calibration

For over eight years our US military has been operating without a reliable means of effective calibration for their radar systems. With the two satellites that are currently designated to carry out these calibrations both operating well past their operational lifetimes, they are therefore expected to fail any day. Our innovation entails the design and fabrication of a shoebox-sized nanosatellite that will supplement these failing satellites. This project, which was executed on a two-year schedule exclusively by a team of undergraduate and graduate engineering students with a budget of \$110K, has also gone on to win two national awards and is sponsored by NASA for a 2012 launch.

Mentor: Wayne Shiroma

John Cameron McClain
English
Completed Project
Arts & Humanities
Honors Program
Oral: 9:00am, Commons

Ghosts, Robots, and Things In-Between: A Florilegium

Ghosts, Robots and Things In-Between: A Florilegium, is a collection of six original short stories in the realm of Speculative Fiction, with an accompanying introductory essay reviewing the history of Speculative Fiction in literature.

The variety of story types, from ghost stories, to fantasy/horror tales, to “hard” science-fiction, provides an illustration of the wide spectrum of settings and narrative elements found in literature of the fantastic, which allows the author to explore and showcase a range of writing voices, narrative types, and the use / subversion of genre conventions.

The introductory essay, comprising a historical and critical review of works of literature of the fantastic (e.g. Fantasy, Horror, and Science Fiction), provides the reader with an understanding of how literature of the fantastic (the term Speculative Fiction is used in the project) has been viewed and received through the centuries, and explores the relatively recent compartmentalization and stratification of stories into “genre fiction” types.

Mentor: Rodney Morales

James W. Akana Murphy
Marine Biology
Completed Project
Natural Sciences
Honors Program
Oral: 9:30am, Learning Annex 2 (201)

Invasive Algal Mats Induce Hypoxia in Hawaiian Coral

Scleractinian corals hold a critical role in marine ecosystems by providing essential structure for coral reef habitats. However, recent investigations have discovered an alarming increase in coral death as the result of stressors, threatening the general health of tropical coastal environments. Of particular interest in this study, is the effect of invasive algal overgrowth on the health of Hawaiian corals through the analysis of anaerobic respiration. Due to the fast-paced growth of *Gracilaria salicornia*, these algae have the ability to overgrow coral heads, restricting water flow and light to smothered corals. Data has been collected reporting hypoxic conditions underneath algal mats in addition to bleaching and partial tissue loss of shaded corals. This study aims to evaluate a means for analyzing stress in corals due to hypoxia through quantifying lactate buildup and lactate dehydrogenase (LDH) activity. In our preliminary analyses, we found significantly more lactate in shaded corals than in controls ($p=0.0159$) and, after two weeks of recovery from shading, found that mean lactate levels decreased to levels found in the control ($p=0.3625$). However, additional testing contradicted these results, where lactate concentrations were not significantly different between treatment and control corals ($p=0.545$, $p=0.2977$, $p=0.3625$, and $p=0.9096$). Furthermore, LDH activity did not significantly differ between treatment and control corals ($p=0.4995$, $p=0.6905$, $p=1$, and $p=0.3949$). These data illustrate the value of these assays for oxidative stress analysis in corals. However, further testing and refinement is necessary to modify these tools for coral tissue applications.

Mentor: Robert Richmond

John Thornton O'Connor
Anthropology
Work in Progress
Social Sciences
Honors Program & Undergraduate Research Opportunities Program
Oral: 12:15pm, Learning Annex 2 (201)

Fishhook Distributions and Early Polynesian Settlement

The colonization of the Pacific has long been of interest to archaeologists due to its relatively recent history and the remoteness of the eastern Pacific islands. The geographical isolation exemplified by the archipelagos of East Polynesia has created an ideal situation for the study of cultural development in the descendants of initial occupying populations. The analysis of multiple artifact classes can provide significant information about early human migrations in East Polynesia. My study will examine proximal endpoint line-attachment-devices (LAD) in prehistoric fishhook assemblages from various Pacific island groups as a means to address issues pertaining to early Oceanic settlement. I will create relational networks dependent upon observed artifact classes and compare these artifact trait networks to the geographical distributions of the analyzed assemblages. The relation of stylistic character states among evaluated assemblages will make visible cultural transmission lineages comprising artifacts of homologous affiliation. This project will specifically address the degree of cultural relatedness among various East Polynesian artifact classes, the distribution of shared classes in space and time, and what the distribution of shared artifact traits can reveal about the colonization order and chronology of prehistoric human migrations in East Polynesia. The goal of my research will be to determine accurate answers to these questions and acquire original data as a contribution to knowledge in the study of Pacific archaeology and prehistory.

Mentor: Dr. Terry Hunt

Rosa Pascua
Nursing
Work in Progress
Social Sciences
Honors & SONDH Honors Program
Oral: 9:15am, Rm. 110

Monitoring the Use of “Non-Medical Supplementation” of Exclusive Breastfeeding
Infants at Discharge on the Postpartum Unit

The purpose of this quality management paper focuses on monitoring the percentage of supplemented exclusive breastfed infants who receive no formula greater than 15ml/feeding during their hospital stay on the postpartum unit. This paper provides a quantitative, descriptive, retrospective study to examine the rate of in hospital newborn feedings from September to October 2011. Documentation of exclusive breastfeeding and use of “non-medical supplementation” is less than the desired threshold goal of 100% of infants who received no formula feeding greater than 15ml/feeding on the postpartum unit.

Indicators of breastfeeding that were documented in the medical record were included as:

Indicator #1: Number of feedings and length as documented on the intake flowsheet;

Indicator #2: Formula supplementation received within the first two days of life, Threshold: 100% received no formula supplementation greater than 15ml/feeding;

Indicator #3: Documentation of breastfeeding complications as noted on the lactation consultant and primary nursing notes.

Results indicated that 60 % of the sample indicated a preference to breastfeed exclusively, while 40% indicated a preference to breastfeed with formula supplementation. 23% received less than or equal to 15ml of formula supplementation and 77% received greater than 15 ml of formula supplementation. According to the results the unit is above the desired goal of meeting the Healthy People 2020 objective of reducing the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life.

Mentor: Dr. Estelle Codier

Randall Perez
Sociology
Project Proposal
Social Sciences
Honors Program
Oral: 11:45am, Learning Annex 2 (201)

From Outreach to Arson: A Critical Look at the Contemporary Animal Rights and Environmental Movement

This research project will attempt to explore the contemporary animal rights and environmental movement and movement participants' ideological support for a diverse range of strategies and tactics. It will also attempt to look at how both radical and mainstream activists within the movement perceive and react to these tactics and their use. This research will attempt to fill gaps in the existing literature related to these topics. The existing research looks at the emergence of social movements as a political and psychological phenomenon. It also explores the reasons that 'new left' movements decide to move more underground and develop tactics and strategies of a clandestine nature. This study will combe conducted over a period of 4-6 months and take a mixed methods approach to research using both quantitative survey questions and open-ended in-depth interviews. Survey data will be used to inform and refine the in-depth interview portion of the study and data from both forms of methodology will be triangulated to corroborate and substantiate results.

Mentors: Dr. Wei Zhang and Dr. Susan Wurtzburg

Jonah A. Preising
Second Language Studies
Project Proposal
Arts & Humanities
Honors Program
Oral: 9:00am, Learning Annex 2 (201)

Determining Appropriacy: ESL Materials in Vietnam Field Study Reflections and
SARS Adaptation of EFL/ESL Materials

For this senior honors project I propose that I travel to the Central Highlands of Vietnam to gain more experience in SLS materials development. I will be traveling as the recipient of the 2012 Honda International Scholarship for Travel and Study Abroad. I will be volunteering for a privately owned language institute for approximately 6 weeks. I will be teaching 3 to 4 lessons a day, 4-5 days a week. I will be examining the curriculum, their teaching materials, interviewing instructors and students with requests for weekly critiques of my interactions in the classroom.

Including the SLS materials modification process, I will be employing techniques gained while earning my Cambridge certificate for teaching English as a foreign language to adults (CELTA). These principles have been touched on briefly during my first semester at University of Hawai'i at Mānoa in the Second language studies program. Known as SARS (select, adapt, reject, and supplement), this materials development approach creates student centered lesson plans that aim to provide context for the learners' schema. The teacher must also develop these materials within the limits and boundaries of an established curriculum. My aim of providing socio-culturally appropriate materials to my target learners is a task that one can do only so many times when training. I believe this project will substantially enhance my CV as well as my future graduate school opportunities.

Mentor: Kenton Harsch, M.Ed.

Almas Rawji
Family Resources
Project Proposal
Social Sciences
Honors Program
Oral: 8:30am, Learning Annex 2 (201)

Nature vs. Nurture: The Continuing Debate Over Personality

Humans struggle throughout their lives to find out “who they are”. One outlook on this lifelong question is nature and nurture, which are two opposing causes of how human personalities come about. Nature is the idea that personalities are predetermined by genetics. Nurture believes that the environment they are surrounded by crafts personalities. The debate over the two has been ongoing for many years. In order to gather background information this research paper analyzed previous peer reviewed journals on the same topic and conducted a seven question online survey amongst a couple hundred UH Mānoa students. The findings have not been concluded yet but it is anticipated that students will believe nurture have a greater influence on personalities than nature. Implications of this research can help people find out how much control they truly have over certain aspects of who they are.

Mentor: Dr. Rick Caulfield

Dylan T.B. Ressler
Biology
Work in Progress
Natural Sciences
Undergraduate Research Opportunities Program
Oral: 8:30am, Rm. 108

Rate of Degradation of Land Snail Shells in Hawaiian Tropical Environments

Understanding decomposition rates of land snail shells and factors that may alter the rates of decay after death is crucial for the accurate assessment of abundances and densities within a community. Often death assemblages, empty shells collected at a site, are used to infer the proportions of living individuals in the community, yet there is little information available regarding the rate at which shells degrade. Because death assemblages may not be indicative of extant populations, extinction estimates may be underestimated. In order to better understand the rates of shell decay in natural environments and to develop better estimates of extant biodiversity, I am conducting trials to determine the rate of degradation of snail shells of seven species in three different environments varying in temperature and rainfall. Before placement in the field, shells were marked, photographed, and larger shells weighed and shell thickness measured. Once every month, sites are returned to and shells photographed and measured to determine their rate of degradation. Preliminary results, 4-5 months after deployment, indicate that shells placed in wet, warm environments lose mass and coloration at a higher rate than those placed in dry and cool environments, although little loss of mass has been observed at any site. Many shells found in the field are lighter in weight and more discolored than the shells in this study thus far, and may be from less recent populations than previously estimated. Additional analyses at the conclusion of the study are required to confirm these early patterns.

Mentor: Dr. Norine W. Yeung

Ruel Reyes
Biology
Work in Progress
Natural Sciences
Honors Program
Oral: 9:45am, Learning Annex 2 (201)

Testing the Ability of DNA Markers to Resolve Species Boundaries

Researchers have looked to the Cytochrome Oxidase I (COI) gene as a candidate DNA sequence to be used in identification and classification of species. COI, being a part of the mitochondrial (mt) genome, may be advantageous because maternal inheritance should result in only one haplotype per individual, except in rare instances where recombination or paternal inheritance occurs. Also, in mitochondria, mutations may more easily become fixed and accumulate in populations compared to nuclear DNA. DNA barcoding is designed to exploit these features as a means of being able to distinguish species. Similar to the use of barcodes or UPCs to identify commercial products, DNA barcoding uses a short segment of information (DNA) to identify species. This barcode is based on characteristic variations in DNA sequences, which can be matched to sequences from databases such as the NCBI GenBank. However, the amount of variation required to distinguish different species is still under debate. One study suggests that intraspecific variation is usually less than 3%, while interspecific variation is usually greater than 8% (Luo et al). In this study, we are testing the concept of DNA Barcoding by analyzing mitochondrial DNA from individuals of several populations of *Ceratitis capitata*, and comparing the sequences with orthologous sequences from other species such as *C. rosa* and *C. fasciventris* that are members of a complex of closely related species. For our study, DNA was extracted from *C. capitata* individuals and the polymerase chain reaction (PCR) was applied to amplify the mitochondrial gene for Cytochrome Oxidase I. After purifying the PCR products and obtaining the DNA sequences, the Clustal W method was used to align sequences to allow for observation of single-nucleotide polymorphisms (SNPs). Searching for alignments using the NCBI BLAST database also allows us to find similar sequences in other species. To date, our data for *C. capitata* conforms to the intraspecific variation value suggested by Luo et al., since sequence divergence was estimated to be less than 1.2%. The interspecific variation value, when compared to *C. rosa* and *C. fasciventris*, was estimated to be greater than 8.1%. We explore the potential meaning of these results in addressing questions such as: Are these same species? Or, how effective is the COI DNA sequence as a universal barcode? How much sequence information is required to resolve taxonomic/phylogenetic ambiguities? Will this be the same in all cases?

Mentor: David Haymer

Jenna Leigh Saito
English
Completed Project
Arts & Humanities
Honors Program
Oral: 8:30am, Commons

“Two Weeks to Live”

This screenplay is an adventure/comedy about Franklin, a thirty-year-old luggage salesman who still lived at home with his bickering parents until his untimely death. After his death, Franklin winds up in purgatory. The problem is, Franklin doesn't remember dying--nor does he remember killing his father and brother in the process. Worse still, purgatory lost documentation of the last two weeks of his life. Before being sentenced to his eternal fate, Franklin is ordered to relive the last two weeks of his life, exactly as it was, in an effort to piece together the mysterious circumstances surrounding his final moments. To monitor his progress and guarantee that he plays by the rules, Isla (an I.D. Specialist in purgatory) accompanies him on his two-week return. During his time back on earth, Franklin discovers that the simple life he thought he lived housed a twisted web of secrets. Secrets that lead to his father's, his brother's and his own demise. Filled with mayhem, mishaps, and mistaken identities, Franklin and Isla venture to 1970s Las Vegas and Hollywood, further ensnaring themselves in the murky underworld of the Syndicate. Franklin must uncover the secrets and untangle himself from the murders if he has any hope of escaping a harsh sentence in the afterlife.

Mentor: Glenn Man

Bonnie Sheehey
Philosophy
Completed Project
Arts & Humanities
Honors Program
Oral: 9:15am, Commons

An Aesthetics of Experience: John Dewey, Maurice Merleau-Ponty, and Zen

John Dewey, an American Pragmatist, and Maurice Merleau-Ponty, a French Phenomenologist, belong to the beginning of an internal critique in the twentieth century Western narrative of philosophy. Upon beginning with the reality of ordinary experience, Merleau-Ponty and Dewey find what we might call an holistic aestheticism in which all the elements of experience come together to produce the totality of effect, pregnant with meaning and growth. Their return to experience provides a context for a dialogue with the Zen tradition which has always been radically and explicitly empirical.

Utilizing Dewey's major treatise on aesthetics, *Art as Experience*, as well as Merleau-Ponty's essays on art, "Cézanne's Doubt" and "Eye and Mind" and various works from Zen, this paper will examine how they devise their aesthetic theories based on a philosophy of experience, thereby creating what may be called an "aesthetics of experience." In order to explicate what I call an aesthetics of experience, this paper will put Zen inspired artworks like haiku poetry and sumi-e ink-wash painting in conversation with Dewey, and Merleau-Ponty. Examples of Western poetry and painting will also be used in conversation with Zen. A comparative dialogue such as this can clarify our understanding of each tradition, and show that there is a continuity in cross-cultural philosophical thought.

Mentor: Roger Ames

Laura Sheldon
Interdisciplinary Studies
Completed Project
Natural Sciences
Undergraduate Research Opportunities Program
Oral: 11:45am, Rm. 108

The Effects of Radiance on Tree-ring Formation in *Metrosideros Polymorpha*

Tree-rings have generally been used as a proxy to justify temperature conditions for the past climate because temperature has been related to optimal tree growth conditions. However, tree-ring formation is also dependent on other climatic factors, such as cloudiness and moisture. This project focuses on observing the relations between cloudiness and tree-ring development in *Metrosideros polymorpha*, commonly called Ohia. This tree was chosen to study specifically the effects in the Pacific, a region sensitive to climate variations.

To study the anomaly of cloudiness tree-ring formation, an Ohia core was taken from a tree in Kaaui Crater that appeared to not have water limitations, so that the key variables in tree-ring growth would reflect light availability and temperature variations. The 53 mm core was then mounted in order to provide a stable platform for slicing. The core was sliced into 210 circular disks, each placed in a tin capsule, and weighed. Every other sample was sent for C14 analysis to later be correlated with positive tree growth. A random sample was taken every 10 mm to be radiocarbon dated so that dates could be assigned distances along the core.

Total monthly radiance was gathered from Honolulu International airport and monthly moisture data was taken directly from the site. Temperature data was taken from a peer-reviewed source. The radiance, in total minutes; moisture, in millimeters; and temperature, in degrees Fahrenheit, were plotted for yearly values against the C14 results from the samples. Conclusions were reached based on correlating trends.

Mentor: David Beilman

Amy Shigemitsu
Social Work
Project Proposal
Social Sciences
Honors Program
Oral: 9:15am, Learning Annex 2 (201)

Examining Perspectives on Online Counseling

Traditional counseling began with talking to a professional face to face about personal experiences and dilemmas. However, modern society has evolved with technological advancements, such as the development of the Internet. Online counseling is now possible through e.g. chat rooms, online videos cameras, and emails. It is important to observe this social transition of people's reliance on alternative forms of counseling. I will be using the term "social transition" in this study to describe the increasing number of people's usage of the online world. Social transition is the macro view of people's comfort level in using the Internet, but I will be focusing on the micro perspective of individuals. The purpose of this study is to gain insight on how people in society view online counseling versus traditional counseling. This study will explore individual's perspectives on online counseling and will examine if the differences in comfort levels of computer and online use are associated with individuals' receptiveness to online counseling. There is a wide range of age among people who use the internet and I will divide my sample into two different age groups (i.e., a younger generation with age from 18-30 and an older generation with age of 31+) in order to examine if certain age groups are more receptive to online counseling. I expect that findings from this study would show evidence of modern society becoming either more accepting of online counseling or relying on traditional counseling continuously.

Mentor: Seunghye Hong

Julianna Sumida
Music
Project Proposal
Arts & Humanities
Honors Program
Oral: 9:45am, Commons

The Evolution of Portuguese and Brazilian Art Song: A Survey From Origins to Nationalism

The origin of Portuguese music is steeped in a combination of traditions present throughout Western Europe in medieval times and in unique geographical elements. The Catholic Church maintained precedence over musical affairs for several centuries and the Great Earthquake of 1755 in Lisbon destroyed most archived musical scores. In the Classical Era, a steady stream of both sacred and secular songs emerged and continued to proliferate throughout the Romantic Period, when the influence of Italy, Germany, and France was at its height. Finally, Portugal experienced a dictatorship under António Salazar followed by a revolution in the twentieth century, and modern composers have attempted to capture sentiments toward these events.

After its discovery, Brazil began its chronicled musical history under Jesuit missionary influence, though indigenous people groups existed throughout the land prior to Portuguese arrival and had their own musical traditions. As in Portugal, Brazil maintained strictly sacred musical practices until the Classical Era. Slowly, Brazilian composers began writing secular pieces for performance, and were also heavily influenced by Italy, Germany, and France during the eighteenth century. Brazil's nationalistic movement under Getúlio Vargas occurred in the early twentieth century, and with it came an outpouring of nationalistic compositions, most notably by Heitor Villa-Lobos.

In Spring 2012, I will present a vocal recital, which will give an aural survey of both Portuguese and Brazilian art song histories by highlighting key composers from each musical era. My accompanying paper will explain both the intertwined and individual influences on the music of each culture.

Mentor: Dr. Maya Hoover

Taryn Takebayashi
Biology
Project Proposal
Natural Sciences
Honors Program
Oral: 10:00am, Learning Annex 2 (201)

A Phylogenetic and Morphological Comparison of C and K Corpuscles in New and
Old World Ampullariids (Apple Snails)

Apple snails (Ampullariidae) are comprised of approximately 150 species of freshwater, operculate gastropods with a pantropical/subtropical distribution. They are basal members of the Caenogastropoda, the most diverse group of living snails. Systematic relationships within the family and to other gastropods remain unclear. A clearer understanding of relationships among parasites or endosymbionts and their hosts can provide deeper understanding of the evolutionary history of host species. Recently, researchers have described the occurrence of putative endosymbionts, termed corpuscles, from the midgut gland and feces of the ampullariid *Pomacea canaliculata*. Such corpuscles are unique to the family. While early studies suggest a close relationship between the corpuscles and cyanobacteria, their phylogenetic origins are uncertain. Additionally, it is unknown whether all apple snail species possess such corpuscles and if they share the same evolutionary history.

The purpose of this investigation is to determine if other genera of apple snails also possess corpuscles and whether these corpuscles are similar to those previously described. The midgut gland and feces of three apple snails found in Hawai'i, *Pomacea canaliculata*, *Asolene spixi* (natives of South America) and *Pila conica* (a native of the Phillipines), will be examined for the presence of corpuscles. Morphological comparisons will involve microscopy, (light, and electron microscopy (TEM and SEM). Isolated corpuscles will also be analyzed phylogenetically using the 16S ribosomal gene. Preliminary results indicate the presence of corpuscles in *Pila conica* and *Asolene spixi* with similar overall appearance to those isolated from *Pomacea canaliculata*.

Mentor: Kenneth Hayes

Marisa C. Watanabe
Global Environmental Science
Work in Progress
Social Sciences
Undergraduate Research Opportunities Program
Oral: 12:30pm, Rm. 110

Down-scaling Climate Change Adaptation: A Framework for Cultivating Community Resilience Processes

In the context of a human dimensions climate change discourse that has emphasized top-down international policy frameworks, mitigation options, and large-scale strategies for adaptation, a community resilience centered paradigm is valuable for a much needed evaluation of our true ability to deal with climate change at the local level. The goal of this research project was to synthesize current thought and practice regarding a community resilience process for enhancing the collective capacity of citizens and institutions to respond to and influence the course of change following future climate change impacts. An interdisciplinary literature review and analysis of resilience theories, adaptation frameworks, and approaches for linking science and official decision-making with community involvement was conducted. Qualitative perspectives were also gathered through interviews of individuals with expertise concerning climate change adaptation or experience with place-based community level environmental efforts. A framework outlining the community resilience process focuses on the local values, strengths, and networks of communities and was constructed in order to contribute to a clearer conceptual understanding of how resilience applies to communities in the context of climate change adaptation.

Mentor: Dr. Bruce Wilcox

Celeste Yee
Biology
Work in Progress
Natural Sciences
Undergraduate Research Opportunities Program
Oral: 9:15am, Rm. 108

Describing the Reproductive Behavior of *Pila Conica* Under Varying Light Cycle and Temperature Conditions

Apple snails are freshwater gastropods in the family Ampullariidae. They often serve as food for other animals and are consumed by people. Because of their high fecundity and rapid maturation, several ampullariid species have been promoted as feed for other aquacultured animals. Introduced *Pila conica* are established in wetlands and agricultural areas on Molokai. This ampullariid may be a good aquaculture candidate, contributing to the growing local industry. In its native range, it is being replaced by other alien apple snails but is the preferred food species. If *Pila conica* can be developed as an aquaculture product in Hawaii, the methods used could be transferred to farmers in its native range. This project aims to obtain basic data for assessing the suitability of *Pila conica* as an aquaculture species. Life cycle characteristics will be determined under various light and temperature conditions. Thus far 80 snails have been collected and kept in indoor aquaria for 3 months, with a light cycle that mimics the natural daylight cycle in Hawai'i. Although no viable egg clutches have yet been laid, one clutch of inviable eggs was found 2 months after the snails were collected. In the wild, *Pila conica* lay their eggs in vegetation on the muddy banks of ponds. Therefore, ten snails are now kept in outdoor aquaria set up to mimic this by surrounding them with turf, and taro plants are grown in the aquaria to provide additional egg laying substrates. As yet, however, no viable eggs have been laid.

Mentor: Dr. Robert Cowie

Hadas Zachor
Women's Studies
Work in Progress
Social Sciences
Honors Program & Undergraduate Research Opportunities Program
Oral: 9:45am, Rm. 110

The Effects of Incarceration on Experiences of Pregnancy and Childbirth

The growing number of incarcerated women in the past few decades has brought about new issues concerning gender-specific correctional policies. Many existing policies in correctional facilities were based on male-only prisons. However, women have unique needs, especially in the area of reproductive health. Pregnancy during incarceration poses a variety of challenges for the pregnant inmates, healthcare providers, and correctional facilities. While there is academic literature regarding medical aspects such as birth outcomes and prison health care policies, there has been relatively little research done on the experience of pregnancy and childbirth from the inmate's perspective. Additionally, minimal regulation is imposed on correctional facilities to ensure that basic health needs regarding prenatal care and other medical necessities are being provided in an adequate and consistent manner.

This research project will explore the effects of being incarcerated on experiences of pregnancy and childbirth through one-on-one interviews with former inmates who were pregnant while incarcerated in Hawai'i's prison or jail facilities. Participants will provide insight into the quality of health care provided to the prisoners, as well as specific areas which they feel are in need of improvement. The interviews will be analyzed in the context of the Hawai'i Department of Public Safety's existing published policies regarding prenatal care for pregnant inmates and the Standards for Health Services in Prisons published by the National Commission on Correctional Health Standards for Health Services in Prisons.

Mentor: Meda Chesney-Lind

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