



**Summary of Qualifications
of the
Rapid Risk Assessment Team**

**Presented
to the
Hawai'i Inter-Island Ferry
Oversight Task Force**

January 10, 2008

Belt Collins Hawaii Ltd.
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ATTACHMENT E

DOT RAPID RISK ASSESSMENT SCOPE OF WORK

DEPARTMENT OF TRANSPORTATION
RAPID RISK ASSESSMENT

The purpose of the Rapid Risk Assessment (“RRA”) is to provide early and independent assessment of: 1) observed environmental risks associated with the Hawaii Superferry operation, if any, and 2) operational compliance with mitigation measures enumerated in section 4(a) of Act 2, Executive Order 07-10 and the Agreement between Hawaii Superferry, Inc. and the State of Hawaii.

Act 2 requires the preparation of an environmental impact statement (“EIS”) “regarding commercial harbor improvements undertaken to accommodate a large capacity ferry vessel and its operations, including secondary impacts of such commercial harbor improvements, including impacts of a large capacity ferry vessel company and its operations.” The EIS process is expected to take between 12 and 15 months with a projected completion date of December 31, 2008.

The RRA shall commence on contract award. The RRA shall be completed within three (3) months of commencement of field investigations. At the end of the three (3) month period, a written report shall be delivered by the RRA contractor to the Governor, Director, Department of Transportation (“DOT”), Chairperson, Board of Land and Natural Resources (“DLNR”), and Chairperson, Board of Agriculture (“DOA”).

SCOPE OF WORK

The RRA shall include, but not be limited to, the following:

1. **Preparation**

- a. Review the Agreement between Hawaii Superferry, Inc. and the State of Hawaii for conditions, protocols and mitigation measures included in Act 2 and/or Executive Order 07-10 and accepted by the Superferry as conditions to operation (hereinafter “conditions”).
- b. Meet with DOT Harbors and Superferry personnel regarding: logistics for the conduct of the RRA; interface with DOT and Superferry designated personnel for receipt of data related to compliance with conditions, authorization to access property and monitoring of operations; and obtain required security clearances.
- c. Plan for, provide and manage RRA staff necessary to assess Superferry operations and observed environmental risks, if any.
- d. Plan for, provide and manage RRA staff necessary to assess, monitor and document Superferry compliance with conditions.

2. **Field Work**

- a. Commence field investigations on December 13, 2007;
- b. Conduct field investigations in all operational ports assessing, monitoring and documenting:

- (1) Observed environmental risks, if any, not contemplated or addressed by the conditions.
- (2) Compliance with the following conditions:
 - (a) Posting of signage and notification to passengers in advance of travel regarding all bans, inspections, check-in procedures and deadlines, including but not limited to the bans on the transport of:
 1. iwi or human bones;
 2. fishing nets of any kind;
 3. rocks, soil, sand, dirt (except for soil or dirt in potted plants inspected and cleared by for transport by HDOA);
 4. dead coral;
 5. opihi;
 6. lobster or other crustaceans;
 7. swine;
 8. cut logs, cut trees and/or tree limbs.
 - (b) Requiring passengers declare all plants, fruits, seeds and any other biological medium;
 - (c) Confiscation of any and all pests for control or eradication purposes or invasive species;
 - (d) Inspection of all vehicles prior to boarding, including:
 1. trunks of all cars;
 2. beds of all pickup trucks; and
 3. the undercarriage and interiors of all vehicles;
 - (e) Prompt notification to the appropriate governmental agency regarding any violation or potential violation of invasive species, agricultural, conservation or other law;
 - (f) Avoidance of vessel operations within the boundaries of the Hawaiian Humpback Whale National Marine Sanctuary (HHWNMS) or waters less than 100 fathoms from January 1 to April 30 of each calendar year. Note: The vessel may operate in the HHWHMS if:
 1. the Master of the vessel determines that said operation is in the interest of passenger safety and comfort or vessel safety; or
 2. the vessel is making an immediate approach to or departure from the ports of Honolulu, Kahului, Nawiliwili or Kawaihae.

If the Master makes a determination that operation in the HHWNMS or in waters less than 100 fathoms between January 1 and April 30 is necessary, the Master shall:

1. refer to and consider existing data on aerial and shore-based systematic surveys of whale densities to select areas of lesser densities;
2. not exceed twenty-five (25) knots;

3. document the operation (time, location, course and any evasive actions take) in the vessel log book with a certification by the Master that the vessel did not exceed 25 knots; and
 4. provide a copy of the log book entry(ies) to DOT and DLNR.
- (g) Posting of two (2) whale lookouts on the vessel with direct communication possible between the lookouts and the Master (observers may serve as lookouts);
 - (h) Maintaining a minimum of 500 meters from sighted whales;
 - (i) Utilization of radar, night vision equipment and bow-mounted cameras to detect whales and try to avoid collisions;
 - (j) Documentation of any whale collision, noting observable damage or injury to the whale, with the vessel remaining on the scene until rescue arrives (if possible) and detailed written report to DOT and DLNR within 24 hours;
 - (k) Designation of a DLNR trained crew member who, between Sep 15 and Dec 15 of each year, will retrieve and care for downed seabirds on the vessel prior to evening departures from Nawiliwili, Kahului and/or Honolulu and prior to morning departures after being docked overnight;
 - (l) No discharge of wastewater into the ocean;
 - (m) Completion of traffic studies, including traffic counts, to be furnished DOT by January 1, 2008;
 - (n) As directed by DOT, implement a vehicle movement and management plan for each port of operation;
 - (o) Terminal facility design shall permit vehicles to enter each port terminal facility a minimum of two (2) hours prior to the departure of the vessel;
 - (p) Employ trained staff to manage traffic entering and exiting each port terminal facility;
 - (q) As directed by DOT, retain and post off-duty police (or their equivalent) to direct traffic, control signals and/or respond to unforeseen traffic problems;
 - (r) Submission of a Facility Security Plan and Vessel Security Plan to the USCG for approval prior to commencement of operations;
 - (s) Coordination of Superferry operational plans with county fire and police departments;
 - (t) Agricultural screenings of passengers and visual inspections and agricultural screenings of all vehicles, including visual inspections of:
 1. engines;
 2. interiors;

3. undercarriages;
 4. wheel wells;
 5. trunks;
 6. beds of pickup trucks
 7. trailered equipment and vehicles;
- (u) Deny boarding of vehicles that have not been inspected and screened and/or vehicles containing prohibited items;
 - (v) Notify passengers in advance that:
 1. All vehicles, camping, hiking, hunting, snorkeling, diving, fishing and boating equipment (including boats and trailers) should be thoroughly washed with fresh water and be free of debris;
 2. All vehicles, including "off road" or four-wheel drive vehicles (including trucks, dirt bikes, and all-terrain vehicles) will be subject to screening and inspection, including for dirt or mud; and
 3. Valid hunting licenses are required by DLNR in the State of Hawaii prior to hunting;
 - (w) Deny boarding of vehicles that are excessively dirty, muddy, or that have caked-on mud on the vehicle and/or its tires;
 - (x) Permit living plants and propagative plant parts (e.g., roots and root stock) on the vessel only if accompanied by a valid DOA certificate of inspection;
 - (y) Permit DOA inspection of cut or harvested flowers, foliage, fruits, vegetables and/or other non-propagative plant parts;
 - (z) Permit only the following animals without a DOA certificate: Domestic cats, dogs, pigeons and rabbits.
 - (aa) Permit the following domestic livestock and poultry with a DOA certificate: Domestic cattle, horses, donkeys, goats, sheep, chickens and roosters;
 - (bb) Deny boarding to swine of any kind, including but not limited to pigs, pot-bellied pigs, hogs, boars and sows;
 - (cc) Provide DOA approved boot scrubbers at each port;
 - (dd) Require passengers declare, orally or in writing, all plants, fruit, seeds and any other biological medium;
 - (ee) Confiscate any "pests for control or eradication purposes" and invasive species and work with DOA to learn on how to screen and identify same;
 - (ff) Cooperate in any risk assessment performed by DOA and any monitoring or inspections by any state officials, employees or contractors;
 - (gg) Provide to passengers information provided by the State of Hawaii and/or Counties concerning restrictions on

the use of cultural and natural resources, including but not limited to hunting and fishing rules and camping permits;

- (hh) Consider adding a cultural briefing on Hawaii's cultural and natural resources to its on-board programming;
 - (ii) Consider adding a special transport rate for agricultural products.
- c. Field investigations shall include random unannounced assessment, monitoring and documentation of inspections and evaluations performed at all operational ports, including arrivals and departures at all ports in both daylight and evening hours, weekdays and weekends.
 - d. Field investigations shall include a minimum of one transit on the Superferry between each port in operation during the term of the RRA.
 - e. Field investigators shall take such steps as are reasonably necessary to credibly confirm or deny compliance with conditions.
 - f. Field investigators and/or Contractor shall contact DOT's identified point of contact should they require additional information or guidance regarding assessment, monitoring and documentation of condition compliance or noncompliance.
 - g. Contractor shall identify and/or recommend any additional measure that may be determined reasonably necessary to provide operational safeguards in accordance with the intent of Act 2 and the conditions established under Executive Order 07-10, including the substantive basis for such recommendation(s).
 - h. Contractor shall identify and/or recommend the discontinuation or removal of any condition established under Executive Order 07-10 determined to be unnecessary or of no further need, including the substantive basis for such recommendation.

3. Deliverables

- a. Contractor shall prepare a Draft RRA for internal distribution to DOT, DLNR and DOA and incorporate comments from the departments. The Draft RRA shall be delivered to the departments fifteen (15) days prior to the delivery of the Final RRA Report with the departments provided seven (7) days for the submissions of comments.
- b. Contractor shall prepare a Final RRA Report for distribution to the Governor, DOT, DLNR, DOA and the Oversight Task Force. The report shall include summary assessments of compliance in all areas covered by conditions and incorporate and include the data obtained during assessment and monitoring, including the results of field investigations identified by date, location and time. The Final RRA Report shall also document environmental concerns noted during the field investigations which are not addressed by Act 2 or Executive Order 07-10.
- c. Contractor shall deliver the Final RRA Report 90 days after commencement of field investigations.
- d. Contractor shall provide electronic files to DOT.

PRIME CONTRACTOR – BELT COLLINS HAWAII LTD.



September 25, 2007
2006.70.0403 / 07EP-236

Mr. Michael D. Formby, Deputy Director
Harbors Division
Department of Transportation
79 South Nimitz Highway
Honolulu, HI 96813

Dear Mr. Formby:

**State of Hawaii Department of Transportation (DOT)
Job HC 90040
Statewide Inter-Island Ferry Environmental Services and Planning Project**

Belt Collins Hawaii Ltd. is pleased to respond to the DOT's Notice To Providers of Professional Services for performance of a comprehensive environmental review to address the inter-island ferry improvements and operations at commercial harbors statewide and other planning activities. Belt Collins understands that (1) services are anticipated to be immediately required with completion of all work requirements within eight calendar months of the notice to proceed, with DOT having an option to extend the contract, and (2) services may include, but are not limited to: environmental analyses in accordance with Hawaii Revised Statutes (HRS) Chapter 343, the preparation of environmental documents, community liaison services, facilitation of public meetings/comments, and other activities necessarily related to the project. Our team qualifications are as follows.

Honolulu
Guam
Hong Kong
Philippines
Seattle
Singapore
Thailand

**EXPERIENCE AND PROFESSIONAL QUALIFICATIONS RELEVANT TO THIS PROJECT,
INCLUDING KEY PERSONNEL AND SUB-CONSULTANTS**

As a multidisciplinary Hawai'i company providing environmental consulting, planning, engineering, and landscape architecture services, Belt Collins is well-suited to serve the needs of the DOT, particularly should the scope of work change or evolve. The firm has more than 50 years of experience serving State, Federal, county, and private clients, and has been preparing documents and conducting processes to comply with HRS Chapter 343 since the law was promulgated. With our network of specialty sub-consultants, we have the technical breadth and depth to meet the anticipated challenges of the subject project. Special studies would be conducted to address the issues that the public would expect in the environmental review. Such issues and the sub-consultants that would conduct the studies are listed below.

- Marine mammals (dolphin, whale and pinniped species). Study to be conducted by Marine Mammal Research Consultants (MMRC).
- Invasive species. Study to be conducted by Bishop Museum, Hawaii Biological Survey (HBS) Program.
- Traffic. Study to be conducted by Fehr & Peers/Kaku Associates (F&P/KA).

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- Socioeconomics. Study to be conducted by Belt Collins and supported by Mr. John R. Kukeakalani Clark.
- Cultural practices. Studies to be conducted by Cultural Resources Hawaii, Inc., International Archaeological Research Institute Inc. (IARII), and Pacific Legacy.

Additional special services provided by other sub-consultants include the following:

- Public meeting facilitation. Services to be provided by Mr. Thomas J. Mitrano, an experienced facilitator in the community, government, private, and non-profit sectors.
- Software to accommodate the high volume of comments expected during public review(s). Service and Web-based software would be provided by Parametrix; Web-based software is called Comment Management and Response Tool (CMART).

Key Belt Collins personnel and their qualifications follow:

Principal-in-Charge. Ms. Susan A. Sakai will serve as Principal-in-Charge and provide overall direction and collaboration at milestone decision and deliverable periods. Ms. Sakai has 20 years of experience in the preparation of environmental assessments and impact statements in accordance with HRS Chapter 343 and NEPA. She has specialized in public outreach, including the Hawai'i Statewide Transportation Plan for DOT. Ms. Sakai is a member and former chair of the Marine and Coastal Zone Advocacy Council for the State Office of Planning.

Project Manager. The Project Manager will be Ms. Lesley A. Matsumoto. Her 19 years of experience includes managing federal and state environmental processes and documents requiring coordination among agencies and experts in various disciplines of study. Ms. Matsumoto has managed NEPA EISs for base closure and realignment actions in Hawai'i and Guam, and for the proposed development of Ford Island, Pearl Harbor, Hawai'i. Her HRS Chapter 343 experience includes managing the environmental assessment for Hawaiian Electric Company's East O'ahu Transmission 46kV Phased Project. This project was done in collaboration with the lead environmental attorney for the Hawaii Superferry, as the action involved was proposed as an alternative to HECO's failed Wa'ahila Ridge project. Along with her Hawai'i and Guam experience, Ms. Matsumoto has six years of experience conducting and managing air quality and health risk assessment projects in California, including supporting the air quality impact analysis for the Alameda Consolidated Corridor Environmental Impact Report for the Alameda Corridor Transportation Authority.

Senior Planners. One of our Senior Planners on the team, John Kirkpatrick, Ph.D., will focus on the potential socioeconomic impacts associated with the secondary impacts of the statewide harbor improvements. Dr. Kirkpatrick has over 21 years of experience providing socio-economic impact assessments, market studies and program evaluations for residential, resort, sports, industrial and commercial projects. He has conducted and managed dozens of socio-economic impact studies and market studies throughout Hawai'i and on Guam, including an economic impact analysis for DOT Harbors Division. He has conducted policy studies and forecasts for the County of Maui and private sector clients, and participated in stakeholder meetings for the 2020 O'ahu Harbor Master Plan and facilitated meetings on fisheries and agricultural quarantine. Dr. Kirkpatrick joined Belt Collins in late 2005 and is currently managing the Kahului Commercial Harbor 2030 Master Plan and EIS.

The second Senior Planner on the team would be Mr. Lee W. Sichter. With 25 years of experience, he has extensive knowledge of the land use permitting system and land use policy in Hawai'i. His areas of

expertise include the preparation of permit applications, environmental impact studies, and related studies pertinent to a wide variety of planning projects, including public facilities and commercial developments.

Environmental Scientists. Ms. Maura C. Mastriani will be one of several environmental scientist who would support this project. She has prepared NEPA and HRS Chapter 343 environmental assessments, and is currently a key member preparing the Kahului Commercial Harbor 2030 Master Plan and EIS.

Key specialty sub-consultants and their qualifications follow:

Marine Mammal Specialist. The analysis of the potential secondary impacts and mitigation associated with the statewide harbor improvements on specific marine mammals will be conducted by Joseph R. Mobley, Jr., Ph.D., dba MMRC. Dr. Mobley's Ph.D. is in the area of comparative psychology, which involves the study of animal behavior, and since 1980, his research has focused on the behavior, abundance, and distribution of marine mammals, primarily humpback whales. In the past approximately 10 years, he has performed aerial surveys of marine mammals in the waters around the main Hawaiian Islands. This work has provided the first abundance estimates for 16 species of marine mammals that inhabit Hawaiian waters. Dr. Mobley has provided research support to the Office of Naval Research and the National Oceanographic and Atmospheric Administration, and has authored numerous journal and technical publications on marine mammals in the Hawaiian Islands.

MMRC would perform the following services: analysis and summary of data from 1993-2003 aerial surveys of marine mammals (whales, dolphins and pinnipeds) in Hawaiian waters with regard to proposed routes of the Hawaii Superferry; summary of relevant literature regarding incidents of shipstrikes involving marine mammals as well as literature regarding possible impacts of ocean noise (i.e., ocean acoustic impacts); and review of operations proposed by Hawaii Superferry to avoid shipstrikes as well as possible technologies and mitigations not currently proposed.

Invasive Species Specialists. The analysis of invasive species as a potential secondary impact of statewide harbor improvements and the development of mitigation will be conducted by the HBS. The HBS, established by the State Legislature in 1992 as a program of the Bishop Museum, was created to locate, identify, and evaluate all native and non-native species of flora and fauna within the state and maintain the reference collections of that flora and fauna for a wide range of uses. In coordination with related activities in other federal, state, and private agencies, the HBS gathers, analyzes, and disseminates information necessary for the wise stewardship of Hawaii's biological resources. HBS biologists have conducted extensive biological surveys on the islands and harbors of O'ahu, Kaua'i, Maui and Hawai'i and have the most comprehensive information available on the presence and distribution of native and non-native species throughout the islands.

The project team would be led by Francis G. Howarth, Ph.D., and consist of zoologists, entomologists, herpatologists, and other specialists. HBS would provide a list of species-of-concern and recommendations for minimizing further inter-island transport of these species. The objectives of the HBS's review would be to: review HSF operational plans and policies; identify specific terrestrial and marine invasion pathways associated with the HSF; and identify state-of-the-art interdiction measures and improvements, if needed, to mitigate these invasion pathways.

Traffic Specialist. Fehr & Peers/Kaku Associates (F&P/KA) has been involved in transportation projects in Hawai'i since the 1970s, including statewide projects and those for specific islands. The firm has assisted the state DOT in the preparation of the last three statewide transportation plans. In addition, F&P/KA has prepared long-range transportation planning studies for O'ahu (two of the last three), Maui (two of the last three), Kaua'i (two of the last three), and Hawai'i (once). The firm is currently involved in the Kahului Commercial Harbor 2030 Master Plan and EIS, and is assisting the Hawai'i DOT on legal

matters associated with the Hawaii Superferry. F&P/KA has also conducted a variety of traffic studies on each of the islands in the state and traffic studies for a variety of harbors on the mainland, including the Port of Los Angeles, the Port of Long Beach, and Dana Point.

F&P/KA would evaluate existing conditions, estimate impacts associated with alternatives, and identify any appropriate mitigation.

Socioeconomic Specialist. The socioeconomic analysis will be conducted by Belt Collins, led by Dr. Kirkpatrick, and supported by Mr. John R. Kukeakalani Clark. Mr. Clark is a consultant on water safety projects and on environmental assessments, specifically social impact assessments to identify impacts to beach/ocean activities and user groups, and is a sub-consultant to Belt Collins for the Kahului Commercial Harbor 2030 Master Plan and EIS. Mr. Clark retired as Deputy Fire Chief of the Honolulu Fire Department in 2005 after 33 years of service and has authored seven books on beaches, including all islands that are the subject of the DOT's statewide review. Mr. Clark holds a B.A. in Hawaiian Studies and a Masters in Public Administration.

Tasks would include: compiling and summarizing community concerns about anticipated impacts of the HSF; analyzing anticipated impacts to identify locations and stakeholders thought to be affected; comparative research, including phone interviews with communities affected by US ferry systems; economic impact assessment, dealing with jobs and wages associated with ferry operations, and with spending, jobs and wages associated with passenger behavior; and social impact assessment, dealing with impacts on harbor users and activities, historic sites, cultural and recreational resources near harbors, and fishing and gathering sites. Interviews will serve to refine our understanding of potential impacts, affected populations, and ways to manage impacts.

Cultural Practice Specialists. The cultural impact assessments for four harbors will be conducted by three firms to satisfy Hawai'i State Act 50. Cultural Surveys Hawai'i, Inc., will conduct the assessment at Nawiliwili Harbor, as this firm conducted a similar assessment in 2004 for DOT's Pier 3 Improvements. IARII and specifically Usha K. Prasad, Ph.D., will conduct the Kahului Harbor analysis, as she participated in the one performed in 2004 for the 2025 Master Plan EA. And, Pacific Legacy, Inc., will prepare the cultural impact assessments for Honolulu and Kawaihae harbors; Pacific Legacy prepared a similar analysis for Honolulu Harbor in 1999.

PAST PERFORMANCE ON PROJECTS OF SIMILAR SCOPE

East O'ahu Transmission Project 46kV Phased Project EA, O'ahu, Hawai'i, 2005. Belt Collins in conjunction with HECO prepared an EA following the procedures of HRS Chapter 343. This project was expected to attract substantial public interest and opposition following HECO's preparation of an unprecedented 26-volume EIS in preparation to construct a 138kV transmission line through Wa'ahila Ridge more than 10 years ago. Preparation of that EIS included responses to 6,700 postcard comments and 780 letters representing more than 10,000 individual comments, all which required individualized responses. In anticipating the challenge of a similar outpouring of public interest, HECO retained Belt Collins as part of their team to (1) prepare a document that would be technically defensible and minimize public comments and (2) be prepared for a "comment bombing" situation. Belt Collins worked with an application service provider to develop a Web-based content management system and comments/response tracking tool to meet the project's needs. At the close of the public comment period, fewer than 20 letters were received and the total number of comments was far less than what the client expected. Following completion of the Final EA and publication of the approving agency's (State of Hawai'i Public Utilities Commission) Finding of No Significant Impact, no legal challenges were filed, and the HRS Chapter 343 environmental assessment process was successfully completed in May 2005.

Ala Wai Canal Dredging, Honolulu, Hawai'i, 2003. The first part of this project, completed by Belt Collins for the City and County of Honolulu in December 1998, included preparation of a conceptual dredging design and an EA document to satisfy both NEPA and HRS Chapter 343 requirements. BCH worked and coordinated with an Agency Working Group, a Technical Advisory Group, and the general public. This effort was followed by a contract with the Hawai'i Department of Land and Natural Resources for engineering design and environmental permits.

Programmatic EIS and Communications Program for Ford Island Development, Pearl Harbor, Oahu, Hawai'i, 2002. Belt Collins was retained by the Navy to conduct the NEPA process to evaluate the potential environmental impacts of the Navy's proposed Ford Island Development Program. The proposed action to consolidate selected operations was unique in that it involved special legislation that allowed the Navy to sell or lease properties in Hawai'i and to use the proceeds for construction and facilities maintenance on Ford Island. All parties contributing to the effort were challenged to meet extremely aggressive deadlines while addressing numerous comments, concerns, and unprecedented questions from multi-disciplinary angles. Overcoming these challenges, the NEPA process was completed within two years.

O'ahu Regional Transportation Plan, Hawai'i. Belt Collins' scope of work was to plan and carry out an extensive public involvement program, with support from The Limtiaco Company. The program included logo design, website design and updating, stakeholder interviews, meetings with a subcommittee of the OMPO Citizens Advisory Committee, large public meetings, and outreach events.


EA for Proposed Domestic Commercial Fishing Village at Piers 36-38, Honolulu Harbor, Hawai'i. Belt Collins completed the Final EA for this project and provided civil engineering and landscape design services. DOT Harbors Division was the client. The effects evaluated under the EA included impacts to water quality in Honolulu Harbor.

CAPACITY TO ACCOMPLISH SIMULTANEOUS UNDERTAKINGS

Our team members complement each other, providing ample capacity to undertake simultaneous projects. Belt Collins has a multidisciplinary staff of 100 in Honolulu. Eleven personnel in the planning and environmental consulting departments are available for assignments in master planning, permitting, and environmental studies, supported by two GIS specialists, three graphic designers, and three editors. The civil engineering department has 17 registered civil engineers, an additional nine graduate engineers, a cadastral engineer (registered land surveyor), and 11 CADD/technical personnel. In addition, Belt Collins' affiliations with other consulting firms allow us to retain additional staff to support projects requiring expedited turn-around times.

Sincerely,

BELT COLLINS HAWAII LTD.



Lesley A. Matsumoto
Project Manager



Susan A. Sakai
Principal-in-Charge



Susan A. Sakai

Vice President/Director of Planning

Ms. Sakai has extensive experience in master planning and preparing environmental assessments (EA) and environmental impact statements (EIS) for public and private sector clients. She is experienced in seeking land use and environmental permits and approvals and specializes in conducting public participation and outreach programs.

EDUCATION

M.A., Political Science, University of Hawaii at Manoa
B.A., Political Science, Northwestern University

AFFILIATIONS

AARP Hawaii Executive Council
American Planning Association
DURP Professional Council
Injury Prevention Advisory Committee
Marine and Coastal Zone Advocacy Council

SELECTED PROJECTS

Environmental Assessments (EA) / Environmental Impact Statements (EIS)
Interim Brigade Combat Team (IBCT) EIS, Oahu
EA for Kaipapau, Maakua, Nuuanu, & Maunawili Exploratory Wells, Oahu
EIS for the Waahila 180 and 405 Reservoirs, Oahu
EA and EIS for Waipio Soccer Park, Oahu
EA for USS *Missouri* Memorial, Oahu
South Kohala Resort EIS, South Kohala, Island of Hawaii
EIS for Proposed Developments at Naval Base Pearl Harbor, Oahu
Programmatic EIS for Ford Island Development, Oahu
EIS for the Disposal and Reuse of NAS Barbers Point, Oahu,
EIS for Land Use and Development Plan, Bellows AFS, Oahu
EIS for Proposed Developments for Homeporting of the USS Missouri, Pearl Harbor, Oahu
EA for Diplomatic Telecommunication Service Regional Relay Facility, Guam
EA for Drydock Pier, Ship Repair Facility, Apra Harbor, Guam
EIS for the Disposal and Reuse of Naval Air Station Agana, Guam
EA for Tandem Thrust '93 Military Exercises, Tinian
Mariana Training EIS, Guam and CNMI
EA for Relocation of VRC-50 to Andersen AFB, Guam
EIS for Proposed Facilities Development and Relocation of Navy Activities to the Territory of Guam from the Republic of the Philippines

Public Involvement Process

Oahu Regional Transportation Plan, Oahu
Hawaii Statewide Transportation Plan
Pearl Harbor Historic Trail - Master Plan, Oahu
Hawaii State Comprehensive Outdoor Recreation Plan (SCORP)
Kahului to Paia Shoreline Recreation Plan, Maui
EIS for Disposal and Reuse of NAS Barbers Point, Oahu

Recreation and Interpretive Planning

Hawaii State Comprehensive Outdoor Recreation Plan (SCORP)
Pearl Harbor Historic Trail - Master Plan, Oahu
Pearl Harbor Interpretive Brochure, Oahu
Barbers Point Interpretive Trail, Oahu
Hapuna Beach Park Master Plan and EIS, Island of Hawaii
Kahului Harbor to Hookipa Beach Park Shoreline Recreation Plan, Maui
Kealahou Bay State Historical Park Plan, Island of Hawaii



Lesley A. Matsumoto, LEED AP

Vice President/Dir. of Environmental Consulting

Ms. Matsumoto is responsible for staff and projects within the Environmental Consulting Department. Her project responsibilities include managing federal and state environmental processes and documents that require coordination among agencies and experts in various disciplines of study. Ms. Matsumoto's project management roles for EISs have included base closure and realignment actions in Hawaii and Guam, and the proposed development of Ford Island, Pearl Harbor, Hawaii. Along with her Hawaii and Guam experience, Ms. Matsumoto has six years of experience conducting and managing air quality modeling, monitoring, permitting and health risk assessment projects in California.

EDUCATION B.S., Atmospheric Science/minor emphasis, Environmental Toxicology, University of California, Davis
University Extension Course Work: Solid Waste/Air Quality/Indoor Air Management, University of California, Los Angeles

REGISTRATION OSHA 40-Hr Hazardous Waste Operations and Emergency Response, Hawaii
LEED 2.0 Accredited Professional

AFFILIATIONS Air and Waste Management Association
Hawaii Association of Environmental Professionals, Director
National Assn of Environmental Professionals

SELECTED PROJECTS **Environmental Impact Statements (EIS) / Environmental Assessments (EA)**
EIS for the Disposal and Reuse at Naval Air Station Barbers Point, Oahu
Programmatic EIS for Ford Island Development, Oahu
EIS for the Disposal and Reuse of Naval Air Station Agana, Guam
EIS for the Disposal and Reuse of Surplus Navy Property Identified in the 1994 Guam Land Use Plan Update (GLUP '94)
Alameda Consolidated Corridor Environmental Impact Report, Los Angeles, California
EA for Hawaiian Electric Company's East Oahu Transmission Project, 46kV Phased Project, Oahu
EA for the Proposed FY06 MILCON Project to Construct a Mirror Coating Facility, Advanced Electro-Optical System, Haleakala, Maui
EA for the Proposed Wave Energy Technology Project, Oahu
EA and EIS for Waipio Peninsula Soccer Park, Oahu
EA for Kauai Metals/Auto Recycling Facility, Puhi, Kauai
EA for the Department of the Navy, Realignment of Military Organizations to Marine Corps Base Hawaii, Kaneohe Bay, Oahu, Hawaii (aircraft emission inventory)
Apra Harbor Dredging EA, Guam
EA for Cogeneration Facility at the U.S. Naval Hospital, Guam

Health Risk Assessments/Special Studies

Feasibility Study for In-Vessel Co-Composting of Municipal Solid Waste and Sewage Sludge for DOD Facilities, Oahu, Hawaii
Voluntary Response Program site investigations and free product recovery project on Oahu
Health Risk Assessment for major west coast refinery and former wait tank yard, Bakersfield, California
Fenceline ambient air toxics and meteorological monitoring program for a major west coast refinery, California
Economic Analysis of Proposed Critical Habitat on Rota - Bridled White-Eye
Economic Impact Analysis of Proposed Critical Habitat for Three Endangered Species on Guam and Rota

CURRICULUM VITAE: JOSEPH R. MOBLEY, JR., PH.D.

DBA:

"MARINE MAMMAL RESEARCH CONSULTANTS, LTD"

2924 Eugene Place, Honolulu, HI 96816

Phone: (808) 295-9554

Email: jmobley@hawaii.edu

Consulting Services:

Potential effects of commercial/military operations on marine mammals indigenous to Hawaii and monitoring of marine mammal populations. Data are available from the results of marine mammal surveys (1993-2003) involving 17 species and totaling over 30,000 nm of survey effort throughout the major Hawaiian Islands.

Education:

Ph.D. in Comparative Psychology--December 1984
University of Hawaii at Manoa, Honolulu, Hawaii

Master of Arts in Psychology--August 1978
California State University at Sacramento

Bachelor of Science in Psychology--May 1976
Denison University, Granville, Ohio

Consulting/Professional Experience:

11/07: Contracted by Environmental Division, US Pacific Fleet on project entitled, "Aerial Surveys of Marine Mammals in Support of US WEX Exercises" (Nov. 11-17, 2007).

8/07: Contracted by Environmental Division, US Pacific Fleet on project entitled, "Marine Mammal Monitoring Surveys in Support of "Valiant Shield" Training Exercises (Aug. 13-17, 2007) in Northern Mariana Islands."

7/01 - present: co-Principal Investigator (with Doug DeProspero and Charles Forsyth of Areté Associates, Arlington, VA) on project entitled, "Feasibility of using radar to avoid shipstrike with great whales." Responsible for biological aspects of project (funding source: Office of Naval Research).

1/01 - present: Consultant to Scripps Oceanographic Institution on project entitled, "North Pacific Acoustic Laboratory (NPAL)." Responsible for monitoring marine mammals in waters surrounding Kauai and Niihau (funding source: Office of Naval Research).

JOSEPH R. MOBLEY, JR.

Curriculum Vitae--Page Two

Professional Experience (cont.):

7/02 – 12/03: Principal Investigator on program: "Marine Mammal Monitoring on Navy Ranges." Responsible for conducting aerial surveys of marine mammals on Naval undersea ranges: PMRF Range in Hawaii (Barking Sands, Kauai) and AUTEC Range in Bahamas (Andros Island) (funding source: Office of Naval Research).

2/00-5/00: Consultant to ITT Industries on project entitled, "Potential effects of proposed Hawaiian Shallow Water Training Range (HISWTR) sound projectors on marine mammals (cetacea)."

1/93-12/98: Co-Principal Investigator, Acoustic Thermometry of Ocean Climate Marine Mammal Research Program (ATOC MMRP). Responsible for performing aerial surveys of all marine mammals within ca. 25 nautical miles of major Hawaiian Islands.

8/97: Consultant to Science and Technology International (STI) on project entitled, "Potential effects of Grazing Angle Imaging Lidar (GAIL) tests on inshore marine mammals off Keahole Pt., Hawaii"

5/97-10/97: Consultant to LGL, Ltd, Environmental Consultants on project entitled: "Potential effects of proposed Global Acoustic Mapping of Ocean Temperatures (GAMOT) on marine mammals resident in offshore Hawaiian waters."

4/86-11/86: Consultant to Helber, Hastert & Fee Planners on project entitled: "Potential effects of proposed PMRF Shallow-water Training Range Sound Projectors on Marine Mammals (Cetacea)."

8/89 - 7/06: Faculty, Social Sciences, University of Hawaii-West Oahu
1/05 – Present: Interim Vice Chancellor for Academic Affairs
7/96 – 12/05: Professor Psychology
8/91 - 6/96: Associate Professor (tenured: 8/94)
8/89 - 7/91: Assistant Professor

10/92 - Present: Cooperating Graduate Faculty, Dept. of Psychology,
University of Hawaii at Manoa.

7/90 - Present: Graduate Faculty, School of Social Work (non-compensated
joint appointment with UH West Oahu).

1/93 - 11/93: Co-Principal Investigator (with Louis M. Herman, Dept. of Psychology) on
Project: "Humpbacks off Hawaii" funded by Earthwatch (Center for Field Research).

JOSEPH R. MOBLEY, JR.

Curriculum Vitae--Page Three

1/90 - 5/92: Co-Principal Investigator on Project: "Aerial Surveys of Humpback Whales in Hawaiian Waters" (1990 with Gordon B. Bauer; 1991-92 with Paul H. Forestell) funded by U.H. Sea Grant College Program (1990); National Marine Fisheries Service (1991) and Whale Aid of Hawaii (1992).

1/85 - 5/86: Co-Principal Investigator (with Louis M. Herman, Senior P.I.) on Research Project Entitled: "Humpback Whales in Hawaii: Behavioral Effects of Sound Playback" (funded by Earthwatch and Sea Grant College Program).

Publications and Technical Reports (reverse chronological order):

A. Refereed Journal Articles:

Tiemann, C., Martin, S. and Mobley, Jr., J.R. (2006). Aerial and acoustic marine mammal detection and localization on Navy ranges. *IEEE Journal of Oceanic Engineering*, 31(1):107-119 Available as downloadable pdf at: <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/JOE.pdf>

Mobley, Jr., J.R. (2005). Assessing responses of humpback whales to NPAL transmissions: Results of 2001-2003 aerial surveys north of Kauai. *Journal of the Acoustical Society of America*, 117:1666-1673. <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/JASA-NPAL.pdf>

Mobley, Jr., J. R., Mazzuca, L., Craig, A.S., Newcomer, M.W. and Spitz, S.S. (2001). Killer whales (*Orcinus orca*) sighted west of Ni'ihau, Hawai'i. *Pacific Science*, 55:301-303. <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/Mobley01.pdf>

Au, W.W.L., Mobley, Jr., J.R., Burgess, W.D., Lammers, M.O. and Nachtigall, P.E. (2000). Seasonal and diurnal trends of chorusing humpback whales wintering in waters off W. Maui. *Marine Mammal Science*, 16:530-544. <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/Au2000.pdf>

Mobley, Jr., J. R., Bauer, G. A. and Herman, L. M. (1999). Changes over a ten-year period in the distribution and relative abundance of humpback whales (*Megaptera novaengliae*) wintering in Hawaiian waters. *Aquatic Mammals*, 25(2):63-72. <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/Mobley99.pdf>

Mate, B., Gisiner, R. and Mobley, Jr., J. R. (1998). Local and migratory movements of Hawaiian humpback whales tracked by satellite telemetry. *Canadian Journal of Zoology*, 76: 863-868. <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/Mate98.pdf>

JOSEPH R. MOBLEY, JR.

Curriculum Vitae--Page Four

Refereed Journal Articles (cont.):

Mobley, Jr., J. R., Smultea, M., Norris, T. and Weller, D. (1996). Fin whale sighting north of Kauai, Hawaii. *Pacific Science*, 50, 230-233.
<http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/Mobley96.pdf>

Mobley, Jr., J. R., Herman, L. M. and Frankel, A. S. (1988). Responses of wintering humpback whales (*Megaptera novaeangliae*) to playback of recordings of winter and summer vocalizations and of synthetic sound. *Behavioral Ecology and Sociobiology*, 23, 211-223
<http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/playback.pdf>

Mobley, J. R. and Herman, L. M. (1985). Transience of social affiliations among humpback whales in Hawaiian breeding waters. *Canadian Journal of Zoology*, 63, 762-772
<http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/M-H85.pdf>

B. Chapters in Edited Books:

Frankel, A. S., Mobley, Jr., J. R. and Herman, L. M. (1995). Determining auditory thresholds in free-ranging cetaceans using biologically meaningful sound. In: R.A. Kastelein, J. A. Thomas, P. Nachtigall (Eds.), *Sensory processes of aquatic animals*, pp. 55-70. Woerden, Netherlands: De Spil Publishers. <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/threshold.pdf>

Mobley, Jr., J. R. (1993). Depth perception. In: *Magill's Survey of Social Science: Psychology*, pp. 796-803. Pasadena, CA: Salem Press. <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/depth.pdf>

Helweg, D. A., Frankel, A. S., Mobley, Jr., J. R. and Herman, L. M. (1992). Humpback whale song: Our current understanding. In: J. A. Thomas, R. A. Kastelein, and A. Supin (Eds.), *Sensory abilities of aquatic mammals*, pp. 459-483. New York: Plenum Press.
<http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/song.pdf>

Mobley, Jr., J. R. and Helweg, D. K. (1990). Visual ecology and cognition in cetaceans. In: J. Thomas & R. Kastelein (Eds.), *Cetacean sensory systems: Laboratory and field evidence*. New York: Plenum Press. <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/vision.pdf>

C. Technical Reports:

Mobley, Jr., J. R. (2004). Results of 2004 aerial surveys north of Kauai. Report to North Pacific Acoustic Laboratory program, 25 pp. Available as downloadable pdf file at:
<http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/2004NPAL.pdf>

JOSEPH R. MOBLEY, JR

Curriculum Vitae--Page Five

Technical Reports (cont.):

Mobley, Jr., J. R. (2004). Results of marine mammal surveys on U.S. Navy underwater ranges in Hawaii and Bahamas. Final Report to Office of Naval Research, 27 pp. Available as downloadable pdf file at: <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/ONRfinal.pdf>

Mobley, Jr., J. R. (2003). Results of 2003 aerial surveys north of Kauai. Report to North Pacific Acoustic Laboratory program, 20 pp. Available as downloadable pdf file at: <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/2003NPAL.pdf>

Mobley, Jr., J. R. (2002). Results of 2002 aerial surveys north of Kauai. Report to North Pacific Acoustic Laboratory program, 20 pp. Available as downloadable pdf file at: <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/2002NPAL.pdf>

Mobley, Jr., J. R. (2001). Results of 2001 aerial surveys north of Kauai. Report to North Pacific Acoustic Laboratory program, 20 pp. Available as downloadable pdf file at: <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/2001NPAL.pdf>

Mobley, Jr., J. R., Spitz, S.S. and Grotefendt, R.A. (2001). Abundance of humpback whales in Hawaiian waters: Results of 1993-2000 aerial surveys. Report to the Hawaiian Islands Humpback Whale National Marine Sanctuary, 21 pp. Available as downloadable pdf file at: <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/2001sancreport.pdf>

Mobley, Jr., J.R. (2000). Potential effects of proposed Hawaiian Shallow Water Training Range (HISWTR) sound projectors on marine mammals (cetacea). Report submitted to ITT Industries, 26 pp. Available as downloadable pdf file at: <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/HISWTR.pdf>

Mobley, Jr., J.R., Spitz, S.S., Forney, K.A., Grotefendt, R.A. and Forestell, P.H. (2000). Distribution and abundance of odontocete species in Hawaiian waters: Preliminary results of 1993-98 aerial surveys. Report to Southwest Fisheries Science Center, Administrative Report LJ-00-14C. 26 pp. Available as downloadable pdf file at: <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/SWFSC.pdf>

Forney, K.A., Barlow, J., Muto, M.M., Lowry, M., Baker, J., Cameron, G., Mobley, J., Stinchcomb, C., and Carretta, J.V. (2000). U.S. Pacific marine mammal stock assessments: 2000. Southwest Fisheries Science Center. NOAA Tech Memo-NMFS-SWFSC-300. Available as downloadable pdf file at: http://www.nmfs.noaa.gov/prot_res/readingrm/MMSARS/2000PacSar.pdf

Mobley, Jr., J.R., Grotefendt, R.A., Forestell, P.H. and Frankel, A.S. (1999). Results of aerial surveys of marine mammals in the major Hawaiian Islands (1993-98): Final Report to the

JOSEPH R. MOBLEY, JR

Curriculum Vitae--Page Six

Technical Reports (cont.):

Acoustic Thermometry of Ocean Climate Program (ATOC MMRP), 34 pp. Available as downloadable pdf file at: <http://socrates.uhwo.hawaii.edu/SocialSci/jmobley/ATOC93-98.pdf>

Mobley, Jr., J. R., Forestell, P. H. and Grotefendt, R. (1997). Preliminary results of 1993 and 1995 aerial surveys in Hawaiian waters. In: P.M. Payne, B. Phillips and E. Nitta (Eds.) Report of the workshop to assess research and other needs and opportunities related to humpback whale management in the Hawaiian Islands, April 26-28, Kaanapali, Maui, Hawaii. pp. 1-7.

Mobley, Jr., J. R. (1996). Potential effects of proposed PMRF SWTR sound projectors on marine mammals (cetacea). Final report submitted to Helber, Hastert and Fee Planners, October 2, 1996.

Mobley, Jr., J. R. (1994). Cetaceans in Hawaiian waters. In: P.J. Rappa and R. Brock (Eds.) A site characterization study for the Hawaiian Islands Humpback Whale National Marine Sanctuary, pp. 47-59. Prepared for the National Oceanic and Atmospheric Administration (NOAA) by University of Hawaii Sea Grant College Program.

Mobley, Jr., J. R., Forestell, P. H. and Grotefendt, R. (1994). Results of 1993 aerial surveys in Hawaiian waters. In: 1993 ATOC Marine Mammal Research Program Annual Report (Ann Bowles, editor), submitted to Advanced Research Projects Agency (ARPA).

Amanda J. Cummins

203-A S. Kīhei Rd. ♦ Kīhei, HI 96753

E-mail: amandajcummins@yahoo.com ♦ Cell: (270) 535-7097

SUMMARY OF QUALIFICATIONS:

- Marine mammal research experience from a variety of platforms. 1500+ hours sea time logged.
- Demonstrated academic excellence in undergraduate studies.
- Experienced in cetacean photo-ID with digital SLR cameras.
- Experienced in marine mammal observations with use of “Big Eyes” aboard large vessels.
- Experienced in biopsy sampling with crossbow.
- Experience in line-transect survey methodology.
- NOAA/NMFS (PIFSC) small boat operation 40-hour course certification.
- Basic experience in cetacean acoustics monitoring and analysis.
- Experienced in small boat operation around cetaceans.
- Large whale disentanglement training and response experience: Level 3.
- Experienced in shore-based marine mammal observations with theodolite.
- Use of relevant computer programs: Basic/ general knowledge of Ishmael and Cool Edit acoustics programs. WINCRUZ, ACDSsee database program, Cyclopes, Finscan, Adobe Photoshop. Experienced in Microsoft Excel, Word, PowerPoint, and Access.

EDUCATION: WESTERN KENTUCKY UNIVERSITY, Bowling Green, KY

B.S., Biology; Minor in Chemistry (May 2003)

Western Kentucky University; Department of Biology Scholarship: 2002, 2003

Western Kentucky University; Ogden College of Science, Dean’s List: 2001, 2002, 2003

Western Kentucky University; Classic Scholarship, Scholarship for Academic Excellence: 1999-2003

Kentucky Educational Excellence Scholarship: 1999-2003

Western Kentucky University; Beta Beta Beta Biological Honor Society Officer: 2001, 2002, 2003

Western Kentucky University; Women’s Tennis Team, Division I Scholarship: 1999, 2000, 2001, 2002

Who’s Who Among Students in American Universities & Colleges: 2003

RESEARCH EXPERIENCE:

MARINE MAMMAL OBSERVER (October 2006 and November 2007)

Scripps Institution of Oceanography, Marine Physical Lab, Research Cruise, La Jolla, CA

Performed visual observations for cetaceans offshore Southern California aboard FLIP (Floating Instrument Platform).

Used handheld binoculars and big-eyes to locate and identify cetaceans while recording behaviors exhibited as they traveled through the Southern California area.

AERIAL MARINE MAMMAL OBSERVER (August 2007)

Marine Mammal Research Consultants, Project in Guam

Flew in Cessna Skymaster around Guam and surrounding waters in search of marine mammals. Responsible for sighting and identifying animals to species any time a marine mammal (primarily whales and dolphins) was spotted. Noted group size, composition, and behavior.

CONTRACT RESEARCH ASSISTANT (January 2005 – October 2006)

NOAA Hawaiian Islands Humpback Whale National Marine Sanctuary, Maui, HI

Conducted humpback whale research in support of the SPLASH project. Responsible for photo identification with digital SLR cameras, biopsy sampling, and boat-based observations within Hawaiian waters. Also maintained a complete database of survey data and photo-ID catalog of humpback whales in the entire Hawaiian Island chain. Additional duties included assistance with cetacean disentanglement, stranding, and ship strike response under the supervision of response manager.

Amanda J. Cummins

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Research Experience continued...

BIOPSY SPECIALIST (August 2005)

University of Hawai'i, Hawai'i Institute of Marine Biology, French Frigate Shoals, HI

Assisted University of Hawaii Ph.D. candidate with spinner dolphin research in the Northwestern Hawaiian Islands. Responsible for obtaining biopsy samples collected by crossbow, dolphin sighting effort, and small boat operation.

MARINE MAMMAL OBSERVER (September and October, 2004)

NOAA Southwest Fisheries Science Center, SPLASH Research Cruise, Gulf of Alaska

Performed marine mammal observations during line transect research cruise on the NOAA ship McArthur II with use of 25X "Big Eyes" binoculars. Also responsible for photo-ID from RHIB, fluke matching, and database management.

CONTRACT RESEARCH ASSISTANT – Photo-ID Catalog, SPLASH Project (June 2004)

NOAA Hawaiian Islands Humpback Whale National Marine Sanctuary, Maui, HI

Compiled database of survey information and matched flukes within the photo-ID catalog of all SPLASH research conducted throughout the Hawaiian Islands during winter 2004.

RESEARCH ASSISTANT INTERN (December 2003 – June 2004)

University of Hawai'i, Kewalo Basin Marine Mammal Lab/ The Dolphin Institute, Maui, HI

Assisted with humpback whale research including boat-based behavior observations, fluke photo-ID and matching, and shore-based (theodolite) observations. Maneuvered small boat around humpback whales for data collection and analyzed song samples recorded throughout winter 2004.

RESEARCH ASSISTANT (September – November, 2003)

Humpback Whale Acoustic Research Collaboration (HARC), Queensland, Australia

Performed boat-based and theodolite observations of humpback whales during their southern migration off the East Coast of Australia, focusing primarily on interactions of singers with their conspecifics. Duties included theodolite and computer (Cyclopes) operation, song recording and analysis, and photo-ID of Southern Hemisphere humpback whales.

RESEARCH ASSISTANT INTERN (June – August, 2003)

Texas A&M University, Marine Mammal Research Program, Galveston, TX

Assisted in field surveys of bottlenose dolphin behavior and habitat utilization. Maneuvered small boat around dolphins for photo identification. Also responsible for matching dorsal fins within local catalog by naked eye and with use of the computer program Finscan.

RESEARCH ASSISTANT INTERN (June – August, 2002)

Blue Ocean Society for Marine Conservation, Portsmouth, NH

Concentrated on photo-ID and behavior sequencing of large whales in the Gulf of Maine. Educated whale watch passengers about whale ecology, Gulf of Maine fauna, and conservation.

AMANDA J. CUMMINS

203-A S. Kīhei Rd. ♦ Kīhei, HI 96753

E-mail: amandajcummins@yahoo.com ♦ Cell: (270) 535-7097

References

Mr. David Mattila, Science and Rescue Coordinator – Hawaiian Islands Humpback Whale National Marine Sanctuary

NOAA Hawaiian Islands Humpback Whale National Marine Sanctuary
726 S. Kīhei Rd.
Kīhei, HI 96753

Phone: (808) 281-6234
Email: david.mattila@noaa.gov

Dr. Adam Pack, Assistant Director – The Dolphin Institute

The Dolphin Institute
91-117 Kekai Place
Kapolei, HI 96707

Phone: (808) 679-3690
Email: pack@hawaii.edu

Dr. Bernd Würsig, Director – Behavioral Ecology Lab, Texas A&M University

Texas A&M University at Galveston
Department of Marine Biology, Behavioral Ecology Lab
4700 Ave. U, Bldg. 303
Galveston, TX 77551

Phone: (409) 740-4413
Email: wursigb@tamug.edu

Dr. Albert Meier, Professor and Academic Advisor – Department of Biology, Western Kentucky University

Western Kentucky University
Department of Biology
1906 College Heights Blvd.
Bowling Green, KY 42101

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Email: albert.meier@wku.edu

INVASIVE SPECIES SPECIALISTS

CURRICULUM VITAE

FRANCIS G. HOWARTH, PH.D.

Entomologist & Ecologist
L. A. Bishop Distinguished Chair of Zoology
Department of Natural Sciences
Bernice P. Bishop Museum
1525 Bernice Street, Honolulu, HI 96817
Telephone: (808)-848-4164 Fax: (808)-847-8252
Email: fhowarth@bishopmuseum.org

Education:

B.S. - University of Massachusetts, Amherst (Entomology & Chemistry; 1962)
M.S. - Cornell University, Ithaca (Medical Entomology & Systematics; 1966)
Ph.D. - University of Hawaii, Honolulu (Medical Entomology & Systematics; 1974)

Major Research Interests:

Evolutionary ecology of high-stress environments, especially caves and mountaintops; impact of alien species; biological control of pest species; conservation biology; island ecology; biogeography; biosystematics of biting midges (Diptera: Ceratopogonidae).

Research and Professional Experience in Entomology:

1962-1963: Laboratory technician in insect biochemistry, Cornell University.
1964-1965: Reared ceratopogonids (biting midges) of Northeastern USA for MS research.
1966-1968: Agricultural extension specialist with the International Voluntary Service in Laos, SEA; reared ceratopogonids and other insects, as well as advised on pests and their control.
1970-1974: Associate in Entomology, Bishop Museum, Honolulu.
1974-present: Entomologist, Bishop Museum, Honolulu. Curator of Hawaiian insect collection, ecology and evolution of Hawaiian cave fauna, island biogeography, Hawaii Biological Survey, biosystematics of biting midges, preparation of natural history exhibits, environmental education, conservation biology, biological consultant.
1975-present: Numerous consulting contracts; e.g., environmental impact statements, resources management, and biological inventories funded by state, federal, and private agencies.
1978-present: Graduate Affiliate Faculty, University of Hawaii, Department of Entomology; and since 1986: Departments of Entomology, Zoology, and Geography.
1990-1993: Bishop Museum Representative, Environmental Task Force, a Subcommittee of the Governor's Fruit Fly Eradication Committee.
1990-1994: Member, Hawaii Department of Health Interagency Committee on release of genetically engineered organisms.
1994-present: Member, Hawaii Department of Agriculture Subcommittee on Entomology.
1996-1997: Member, Biological Assessment Technical Panel, for the Kahului Airport Extension EIS, convened by the Federal Aviation Administration. Assisted in developing plans for upgrading quarantine facilities.
2001-present: L. A. Bishop Distinguished Chair of Zoology at Bishop Museum.
2001-2002: Member Hawaii Cave Task Force with Hawaii Department of Land and Natural Resources.

Grant Awards: Numerous research grants and contracts to study island ecology, conservation biology and evolution, especially of cave animals, including the following:

Principal Investigator, "Ecology and Evolution of Hawaiian Cave Organisms," National Science Foundation DEB 75-23106, \$15,000, 4/1/76-9/30/77.

Principal Investigator, "Ecology and Evolution of Cave Animals," National Science Foundation DEB-7904760, \$83,345, 6/1/79-1/31/83.

Principal Investigator, "Biogeography, Ecology, and Evolution of Cave Organisms" National Science Foundation BSR 85-15183, \$80,000, 2/1/1986-2/1/1989.

Co-investigator with C. Simon and F. D. Stone, "The ecology and evolution of Hawaiian cave crickets and cave planthoppers and their surface relatives," Hawaii Bishop Research Institute, \$42,000 5/1/1990-2/1/1992.

Travel:

Visited entomological laboratories and museums in Japan, Philippines, Thailand, Australia, New Zealand, United Kingdom, France, Germany, Spain, and Italy, as well as several in the USA.

Fieldwork:

Extensive field experience in entomology and natural history on all of the main Hawaiian Islands, North America, Laos, Thailand, Malaysia, Japan, Australia, New Zealand, Palau, Guam, Canary Islands, Italy, France, and United Kingdom.

Professional and Honorary Societies:

AAAS; Entomological Society of America; The Explorers Club; Hawaiian Entomological Society (President 1980 & Entomologist of the Year Award 1995); Cave Research Foundation (Science Advisory Committee); National Speleological Society (Fellow, Certificate of Merit); Species Survival Commission (IUCN); Sigma Xi; Societe de Biospeologie, American Cave Conservation Association (Honorary Board Member).

Attendance and paper presentations at numerous national and international meetings, including the 1976, 1980, 1988, 1996 & 2000 Internatl. Congress of Entomology and the 1981 & 1986 Internatl. Congress of Speleology; invited speaker, **51st Congress Italian Zoological Union, Rome, Oct., 1986; Ecology Seminar Series, U.C. Davis, Oct, 1987; Internatl. Vediaia Symposium on Biological Control, March 1989;** Invited speaker on insect conservation at the **XV Symposium, Royal Entomol. Soc., London, Sept. 1989; Internatl. Congress Systematics & Evolutionary Biol., College Park, MD, 1990; American Society of Naturalists, Berkeley, CA 1992;** keynote speaker, **6th Internatl. Orthopterists' Society Meeting, Hawaii, 1993;** keynote speaker, **7th Internatl. Symposium on Vulcanospeleology, Canary Is., 1994;** Symposium co-organizer, "Science and Ethics in Biological Control" **AIBS Annual Meeting San Diego, CA, Aug., 1995; Convenor, XX Internatl. Congress Entomology, Florence, 1996. Organizing Comm. XXI Internatl. Congress of Entomology, Brazil, 2000;** Invited participant, **Marine Conservation Biology Initiative workshop on controlling invasive alien species, Leavenworth, Washington, 27-30 May 1998.** Invited participant, **World Bank East Asia Workshop on Limestone Quarrying and its Impacts on Biodiversity and Cultural Heritage, Bangkok, Thailand, 25-29 January 1999.** Invited speaker, **Australia-New Zealand Biocontrol Conf., Sidney, Feb 2008.**

Editorial Boards:

Bulletin National Speleological Society, 1975-1985.

Journal of Insect Conservation. 1998-present.

Other awards:

Entomologist of the year, 1994 (Hawaiian Entomology Society); Science Award for life time achievement in cave science, 2005 (National Speleological Society); invited contributor to numerous scholarly works (See publication list).

Publications:

Authored or co-authored over 100 reports and publications including two books, 60 research papers, and 40 reports on Pacific region insects, conservation biology, and biological surveys.

Principal Publications and Papers of Francis G. Howarth
(Abstracts, book reviews, notes, and reports not included)
1972-1999

1. Howarth, F.G. 1972. Cavernicoles in lava tubes on the island of Hawaii. *Science* 75: 325-326.
2. Howarth, F.G. 1973. The cavernicolous fauna of Hawaiian lava tubes, 1. Introduction. *Pac. Insects* 15(1): 139-151.
3. Howarth, F.G. 1974. Bionomics and systematics of the biting midge genus *Culicoides* of Laos (Diptera: Ceratopogonidae). Dissertation, University of Hawaii-Manoa, Honolulu. 250 pp.
4. Gagné, W.C. & F.G. Howarth. 1975. The cavernicolous fauna of Hawaiian lava tubes, 6. Mesoveliidae or water treaders (Heteroptera). *Pac. Insects* 16:399-413.
5. Gagné, W.C. & F.G. Howarth. 1975. The cavernicolous fauna of Hawaiian lava tubes, 7. Emesinae or thread-legged bugs (Heteroptera: Reduviidae). *Pac. Insects* 16:416-426.
6. Bousfield, E.L. & F.G. Howarth. 1976. The cavernicolous fauna of Hawaiian lava tubes, 8. Terrestrial Amphipoda (Talitridae), including a new genus and species with notes on its biology. *Pac. Insects* 17: 144-154.
7. Howarth, F.G. 1978. A sorting dish with silicone sealant barriers for rapid sorting of micro-arthropods preserved in fluid. *Pac. Insects* 18(3-4): 215-216.
8. Howarth, F.G. 1979. Neogeoeolian habitats on new lava flows on Hawaii Island: an ecosystem supported by windborne debris. *Pac. Insects* 20: 133-144.
9. Howarth, F.G. 1979. An inexpensive constant temperature chamber for field and laboratory use. *Environmental Entomology* 8: 236-237.
10. Maciolek, J.A. & F.G. Howarth. 1979. A new Megalagrion from Kauai Island (Odonata: Coenagrionidae). *Pacific Insects* 21: 165-171.
11. Howarth, F.G. 1980. The zoogeography of specialized cave animals: A bioclimatic model. *Evolution* 34:394-406.
12. Howarth, F.G. & S.L. Montgomery. 1980. Notes on the ecology of the high altitude aeolian zone on Mauna Kea. 'Elepaio, J. Haw. Audubon Soc. 41:21-22.
13. Montgomery, S.L. & F.G. Howarth. 1980. Records of mummified *Leiothrix* from the summits of Mauna Loa and Mauna Kea. 'Elepaio, J. Haw. Audubon Soc. 41:30-31.
14. Berger, A.J., S. Conant, F.J. Radovsky, D. Mueller-Dombois & F.G. Howarth. 1981. Introduction to Section III, community structure and niche differentiation. Chapter 5. pp. 213-222. IN: Mueller-Dombois, K.W. Bridges, H.L. Carson (eds.), *Island Ecosystems: Biological Organization in Selected Hawaiian Communities*. US/IBP Synthesis Series. Vol. 15. Hutchinson Ross Publishing Co., PA.
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In Press

- Howarth, F.G. & F.D. Stone. In press. Conservation of Biological Resources in Lava Caves and Porous Lava Terrain. *IN: Guidelines for the Protection of Subterranean and Karst Biodiversity. IUCN Special Publication. M. Thurgate, ed.*
- Howarth, FG. In press. Cave ecosystems. *Encyclopedia of Ecology.*

CURRICULUM VITAE

FRED KRAUS

Research Zoologist
Department of Natural Sciences
Bernice P. Bishop Museum
1525 Bernice St. Honolulu, Hawaii 96817
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DEGREES:

- B.S. in Biology, University of Toledo, 1980
- Ph.D. in Biology, University of Michigan, 1987

DISSERTATION TITLE:

- An evaluation of the ontogeny polarization criterion in phylogenetic inference: a case study using the salamander genus *Ambystoma*.

POSITIONS:

- Research Zoologist, Bishop Museum, Aug. 2001 - present
- Alien Species Coordinator, Hawaii Div. of Forestry and Wildlife, Nov. 1996 – July 2001
- Affiliate Graduate Faculty, University of Hawaii, March 2001 - present
- Research Associate, Bernice P. Bishop Museum, Honolulu, Nov. 1997 – July 2001
- Adjunct Research Associate, Museum of Zoology, University of Michigan, Sept. 1996 - present
- Research Associate, Dept. of Biology, University of Michigan, March 1992 – Oct. 1996
- Research Associate, The Conservation Agency, March 1991 - present
- Adjunct Research Associate, Dept. of Biology, University of Michigan, July 1990 - March 1992
- Postdoctoral Research Associate, Dept. of Zoology, University of Florida, April 1988 – May 1990
- Teaching Assistant, Dept. of Biology, University of Michigan, 1980-81, 1984, 1986
- Research Assistant, Dept. of Biology, University of Michigan, 1983, 1984-85
- Field Biologist, Ohio Dept. of Natural Resources, June – August 1980

SCHOLARSHIPS AND GRANTS:

- U.S. Fish & Wildlife Service, risk assessment for invasive reptiles and amphibians, 2006, \$61,000
- National Park Service, surveys for reptiles and amphibians in Hawaii parks, 2005, \$15,871
- Hawaii Invasive Species Council, database of invasive reptiles & amphibians, 2005, \$36,250
- U.S. Fish & Wildlife Service, database of invasive reptiles & amphibians, 2005, \$41,015
- Conservation International, biotic survey of Rossel and Sudest Islands, PNG 2004, \$29,000
- U.S. Fish & Wildlife Service, taxonomic support seized reptiles/amphibians, 2003, \$2500
- U.S. Fish & Wildlife Service, database of invasive reptiles & amphibians, 2003, \$17,500
- U.S. Dept. Agriculture, *Eleutherodactylus coqui* dietary study, 2002, \$7200
- National Science Foundation, PNG biotic surveys, 2001-2005, \$315,000
- National Science Foundation, colubroid phylogenetics, 1992-1995, \$208,350
- State of Michigan Non-game Species Research Grant, *Ambystom texanum* distribution, 1988, \$3280
- Rackham Predoctoral Fellowship, University of Michigan, 1986
- Cleveland Museum of Natural History Research Grant, 1985, \$300
- Rackham Dissertation Grant, University of Michigan, 1985, \$1000
- Walker-Hinsdale Grant, University of Michigan, 1984, \$800; 1985 \$1000
- Rackham Block Grant, University of Michigan, 1983, 1985, \$500 each
- Edwin H. Edwards Scholarship, University of Michigan, 1983, \$500
- NSF Predoctoral Fellowship, 1981-1984

MEMBERSHIPS:

- American Society of Ichthyologists and Herpetologists
- Herpetologists' League
- Society for the Study of Amphibians and Reptiles
- Societas Europaea Herpetologica
- Society for Conservation Biology
- Biological Society of Washington

INVITED TALKS:

- U.S. Department of Agriculture, international symposium "Managing Vertebrate Invasive Species", Ft. Collins, Colorado, August 2007.
- Brown Treesnake Working Group Technical Meeting, Tumon, Guam, April 2007.
- Forestry and Forest Products Research Institute, Tsukuba, Japan, symposium on invasive alien species in the Ogasawara Islands, February 2007
- U.S. Geological Survey, Florida Integrated Science Center, December 2006
- Joint meeting of U.S. herpetological societies, Tampa, Florida, symposium on invasive reptiles and amphibians, July, 2005
- University of Hawaii; Ecology, Evolution, and Conservation Biology Program, December 2000
- Global Invasive Species Program, symposium on pathways of alien species invasion, Edgewater, Maryland, November 1999
- University of Texas at Arlington, Department of Biology, February 1996
- Texas A&M University, Department of Wildlife and Fisheries Science, January 1996
- American Society of Ichthyologists and Herpetologists, symposium on snake phylogenetics and evolution, Edmonton, Alberta, June 1995
- University of Brunei Darussalam, December 1992
- Regional symposium on public and private cooperation in national park development, Roadtown, British Virgin Islands, August 1991
- American Museum of Natural History, November 1990
- International Congress of Systematic and Evolutionary Biology, symposium on phylogenetic analysis of sequence data, College Park, MD, July 1990
- Museum of Zoology, Louisiana State University, March 1990
- First World Congress of Herpetology, symposium on unisexual reptiles and amphibians, Canterbury, England, September 1989
- University of Florida, Dept. of Zoology, October 1988
- American Society of Ichthyologists and Herpetologists, symposium on biology of unisexual vertebrates, Albany, NY, June 1987
- University of Toledo, Dept. of Biology, November 1986

CONTRIBUTED TALKS:

- Hawaii Conservation Conference, Honolulu, Hawaii, August, 2000
- Hawaii Conservation Conference, Honolulu, Hawaii, July 1998
- Society for the Study of Amphibians and Reptiles, Athens, Georgia, July 1994
- Society of Systematic Zoology, Boston, Massachusetts, December 1989

CONSERVATION EXPERIENCE:

- February 2006 – present. Member, Invasive Species Specialist Group of IUCN Species Survival Commission.
- October 2005 – present. Member of governing board, Conservation Council for Hawaii.
- August- September 2005. Conducted inventories for National Park Service of reptiles and amphibians present in Hawaii Volcanoes, Kalaupapa, and Haleakala national parks.

CONSERVATION EXPERIENCE, continued:

- July 2005. Participated in 3-day workshop to identify effective control means for pythons in Everglades National Park, develop plans for a rapid-response program to eradicate incipient populations of invasive alien vertebrates in South Florida, and develop a public-relations campaign to gain public support for both programs.
- April 2003. Provided invited testimony on invasive-species problems in Hawaii and the Pacific to the House Resources Committee, Subcommittee on Fisheries Conservation, Wildlife, and Oceans, and Subcommittee on National Parks, Recreation, and Public Lands.
- 1996-2001. Active as state employee devising and implementing policy and field programs to reduce problems posed by alien species introductions so as to further conservation of native species and ecosystems in Hawaii. Educating public on problems posed by alien species for native biodiversity via television, radio, print, and public speaking. Assisting the development of inter-agency collaborations to combat alien invasions in Hawaii. Coordinating volunteers in habitat restoration projects and alien weed removal.
- 1992-1996. Active in Michigan Biodiversity Project, working to enhance the protection of native biodiversity within the state of Michigan by public advocacy and education, oversight of public lands management, and conduction of biological surveys.
- 1991-1992. Assisted the Center for Plant Conservation (St. Louis, MO) and Fairchild Tropical Garden (Miami, FL) in assessing the status of rare plants in the Virgin Islands and in providing materials for captive propagation of rare species from that region.
- February-October 1991. Designed, acquired funding for, and conducted project in the British Virgin Is. aimed at protecting/restoring native dry tropical forest and monitoring surrounding reefs. Project included surveying, censusing, artificial propagation, and reintroduction of rare plants; eradication of exotic plants and feral sheep and goats; long-term monitoring of forest recovery and transplantation success; scientific surveys of local land snails; and long-term monitoring of adjacent reefs.
- 1980-1995. Conducted numerous surveys of reptiles, amphibians, snails, and plants in Ohio and Michigan for the Ohio Department of Natural Resources, City of Ann Arbor, Michigan Department of Natural Resources, Michigan Department of Transportation, Michigan chapter of The Nature Conservancy, and Michigan Nature Association.

CONSERVATION REPORTS:

- Kraus, F., A. Allison, D.A. Polhemus, and J. Slapcinsky. 2006. Wildlife resources survey for Papua New Guinea. Final report to Department of Environment and Conservation, Port Moresby, Papua New Guinea, 106 pp.
- Bomford, M., F. Kraus, M. Braysher, L. Walter, and L. Brown. 2005. Risk assessment model for the import and keeping of exotic reptiles and amphibians. Final report to Australian Department of Environment and Heritage, 110 pp.
- Kraus, F. 2005. Inventory of reptiles and amphibians in Hawaii Volcanoes, Haleakala, and Kalaupapa national parks. Final report to U.S. National Park Service, Inventory and Monitoring Program, 16 pp.
- Kraus, F., T. Pratt, and J. Slapcinsky. 2005. Wildlife resources survey of Rossel and Sudest islands, Louisiade Archipelago, Milne Bay Province. Final report to Conservation International, Port Moresby, Papua New Guinea, 46 pp.
- Allison, A., F. Kraus, and M. McShane. 2004. Patterns of species richness in the Papuan region: a preliminary assessment using amphibians and reptiles. Final report and accompanying shape files to The Nature Conservancy, Ecoregional Planning/Pacific Island Countries OU, Arlington, Virginia, 9 pp.

CONSERVATION REPORTS, continued:

- Kraus, F., A. Allison, T. Pratt, D.A. Polhemus, J. Slapcinsky, and K. Helgen. 2003. Wildlife resources survey and analysis of Milne Bay Province. Final report to Department of Environment and Conservation, Port Moresby, Papua New Guinea, 139 pp.
- Ducey, P.K., F. Kraus, G. Schneider, and R. Kessie. 1988. An investigation into the status of the small-mouthed salamander, *Ambystoma texanum*, in Michigan. Final report to Michigan Department of Natural Resources, Lansing, Michigan, 22 pp.

FIELD EXPERIENCE:

Australia, Brazil, Brunei, Ecuador, Guam, Lesser Antilles, Palau, Papua New Guinea, Philippines, Puerto Rico, Virgin Islands, all parts of the co-terminous United States. Work in all locations has primarily involved collecting of reptiles, amphibians, and/or land snails for systematic/phylogenetic research or for conservation surveys but also includes ecological mark-recapture studies of snakes and turtles in Ohio and Michigan and surveys for endangered plants in Ohio, Michigan, Hawaii, and British Virgin Islands.

OTHER RELEVANT EXPERIENCE:

- Three years managing graduate and undergraduate students in laboratory research.
- Several years curating reptile, amphibian, and mollusk collections.
- Certified SCUBA diver.

RESEARCH INTERESTS:

- Evolution and conservation of insular faunas, especially reptiles, amphibians, and land snails.
- Evolution and biogeography of the Papuan herpetofauna.
- Patterns and processes of alien species invasions, especially for reptiles, amphibians, and plants.

PUBLICATIONS:

- Kraus, F., and A. Allison. 2007. Taxonomic notes on frogs of the genus *Rana* from Milne Bay Province, Papua New Guinea. *Herpetological Monographs* 21: 33-75.
- Bursey, C.R., S.R. Goldberg, and F. Kraus. 2007. New family, new genus, new species of Acanthocephala (Echinorhynchida) from the lizard, *Sphenomorphus granulatus* (Sauria: Scincidae), from Papua New Guinea. *The Open Parasitology Journal* 1: 41-44.
- Bursey, C. R., S. R. Goldberg, and F. Kraus. 2007. A new species of *Falcaustra* (Nematoda: Kathlaniidae) and other endoparasites in *Sphenomorphus simus* (Squamata: Scincidae) from Papua New Guinea. *Acta Parasitologica* 52: 142-145.
- Kraus, F. 2007. A new species of treefrog from the Louisiade Islands, Papua New Guinea. *Herpetologica* 63: 365-374.
- Kraus, F. 2007. Fly parasitism in Papuan frogs, with a discussion of ecological factors influencing evolution of life-history differences. *Journal of Natural History* 41: 1863-1874.
- Kraus, F. 2007. Taxonomic partitioning within Papuan members of the *Carlia novaeguineae* complex (Lacertilia: Scincidae). *Journal of Herpetology* 41: 410-423.
- Kraus, F. 2007. [book review] *The Frogs of New Guinea and the Solomon Islands*, by James Menzies. *Herpetological Review* 38: 360-365.
- Bursey, C. R., S. R. Goldberg, and F. Kraus. 2007. A new species of *Moaciria* (Nematoda: Heterakidae) and other helminths in the red Mowatta frog, *Hylophorbus* cf. *rufescens* (Anura: Microhylidae) from Papua New Guinea. *Acta Parasitologica* 52: 233-237.
- Shea, G., and F. Kraus. 2007. A list of herpetological type specimens in the collections of the National Museum of Papua New Guinea and the University of Papua New Guinea. *Zootaxa* 1514: 37-60.

PUBLICATIONS, continued:

- Kraus, F., and A. Allison. 2007. Two new species of *Platymantis* (Anura: Ranidae) from New Britain. *Zootaxa* 1485: 13-32.

- Goldberg, S.R., C.R. Bursey, and F. Kraus. 2007. Natural history notes: *Eleutherodactylus coqui*: endoparasites. *Herpetological Review* 38: 183-184.
- Goldberg, S.R., C.R. Bursey, and F. Kraus. 2007. First report of gastrointestinal helminths from the Wokan cannibal frog, *Lechriodus melanopyga* (Amphibia: Limnodynastidae), from Papua New Guinea. *Pacific Science* 61: 429-432.
- Kraus, F. 2007. A new species of *Cyrtodactylus* (Lacertilia: Gekkonidae) from western Papua New Guinea. *Zootaxa* 1425: 63-68.
- Bursey, C.R., S.R. Goldberg, and F. Kraus. 2006. New species of *Raillietnema* (Nematoda: Cosmocercidae) in *Carlia mysi* (Squamata: Scincidae) from Papua New Guinea. *Journal of Parasitology* 92: 1027-30.
- Kraus, F., and A. Allison. 2006. Range extensions for reptiles and amphibians along the northern versant of Papua New Guinea. *Herpetological Review* 37: 364-368.
- Bursey, C.R., S.R. Goldberg, and F. Kraus. 2006. A new species of *Cosmocerca* (Nematoda: Cosmocercidae) and other helminths from *Genyophryne thomsoni* (Anura: Microhylidae) from Papua New Guinea. *Acta Parasitologica* 51: 213-216.
- Bursey, C.R., S.R. Goldberg, and F. Kraus. 2006. New genus, new species of cestode (Proteocephalidae) from the lizard, *Sphenomorphus aignanus* (Squamata: Scincidae), from Papua New Guinea. *Comparative Parasitology* 73: 184-187.
- Kraus, F., and A. Allison. 2006. A new species of *Cyrtodactylus* (Lacertilia: Gekkonidae) from Papua New Guinea. *Zootaxa* 1247: 59-68.
- Kraus, F., and A. Allison. 2006. Three new species of *Cophixalus* (Anura: Microhylidae) from southeastern New Guinea. *Herpetologica* 62: 202-220.
- Kraus, F. 2006. New records of alien lizards from Maui County. *Bishop Museum Occasional Papers* 88: 61-62.
- Duffy, D.C., and F. Kraus. 2006. Science and the art of the solvable in Hawaii's terrestrial extinction crisis. *Environment Hawaii* 16(11): 1, 3-6.
- Bursey, C.R., S.R. Goldberg, and F. Kraus. 2005. Endoparasites in *Sphenomorphus jobiensis* (Sauria: Scincidae) from Papua New Guinea with descriptions of three new species. *Journal of Parasitology* 91: 1385-1394.
- Kraus, F. 2005. A new species of blindsnake from Rossel Island, Papua New Guinea. *Journal of Herpetology* 39: 591-595.
- Kraus, F. 2005. Land snails. Pp. 247-249 in Lazell, J. *Island: fact and theory in nature*. Univ. of California Press, Berkeley, California.
- Kraus, F., and G. Shea. 2005. Additional reptile and amphibian range extensions for Milne Bay Province, Papua New Guinea. *Herpetological Review* 36: 471-473.
- Kraus, F. 2005. The genus *Nactus* (Lacertilia: Gekkonidae): a phylogenetic analysis and description of two new species from the Papuan Region. *Zootaxa* 1061: 1-28.
- Bursey, C.R., S.R. Goldberg, and F. Kraus. 2005. New genus of Cestoda (Anoplocephalidae), new species of Nematoda (Cosmocercidae) and other helminths in *Cyrtodactylus louisiadensis* (Sauria: Gekkonidae) from Papua New Guinea. *Journal of Parasitology* 91: 882-889.
- Kraus, F. 2005. *Rana rugosa*. Pp. 580-581 In Lannoo, M. (ed.), *Amphibian declines: the conservation status of United States species*. University of California Press, Berkeley.
- Kraus, F., and A. Allison. 2005. New species of *Albericus* (Anura: Microhylidae) from eastern New Guinea. *Copeia* 2005: 312-319.
- Kraus, F., and A. Allison. 2005. A colorful new species of *Albericus* (Anura: Microhylidae) from southeastern New Guinea. *Pacific Science* 59: 43-53.

PUBLICATIONS, continued:

- Bursey, C.R., S.R. Goldberg, and F. Kraus. 2005. New species of *Spauligodon* (Nematoda: Pharyngodonidae) in *Lepidodactylus novaeguineae* (Sauria: Gekkonidae) from Papua New Guinea. *Journal of Parasitology* 91: 324-328.

- Goldberg, S.R., C.R. Bursey, and F. Kraus. 2005. Natural history notes: *Rana rugosa*: endoparasites. *Herpetological Review* 36: 56.
- Kraus, F., and A. Allison. 2004. New records of reptiles and amphibians from Milne Bay Province, Papua New Guinea. *Herpetological Review* 35: 413-418.
- Kraus, F., and A. Allison. 2004. A new species of *Tropidonophis* (Serpentes: Colubridae: Natricinae) from Fergusson Island, Papua New Guinea. *Proceedings of the Biological Society of Washington* 117: 303-310.
- Kraus, F., and A. Allison. 2004. Notes on poorly known New Guinea frogs. I. Microhylids from the D'Entrecasteaux Islands. *Herpetofauna* 34: 26-39.
- Goldberg, S.R., C.R. Bursey, and F. Kraus. 2004. Natural history notes: *Anolis equestris*: endoparasites. *Herpetological Review* 35: 384-385.
- Goldberg, S.R., C.R. Bursey, and F. Kraus. 2004. Natural history notes: *Chamaeleo jacksoni*: endoparasites. *Herpetological Review* 35: 387-388.
- Goldberg, S.R., C.R. Bursey, and F. Kraus. 2004. New helminth records for the green anole, *Anolis carolinensis* (Polychrotidae), stump-toed gecko, *Gehyra mutilata* (Gekkonidae), and the metallic skink, *Lampropholis delicata* (Scincidae), from Hawai'i. *Bishop Museum Occasional Papers* 79: 58-62.
- Kraus, F., and F. Duvall. 2004. New records of alien reptiles and amphibians in Hawaii. *Bishop Museum Occasional Papers* 79: 62-64.
- Kraus, F., and A. Allison. 2004. Two new treefrogs from Normanby Island, Papua New Guinea. *Journal of Herpetology* 38: 197-207.
- Kraus, F., and A. Allison. 2004. A new species of *Litoria* (Anura: Hylidae) from southeastern New Guinea. *Herpetologica* 60: 97-103.
- Kraus, F. 2003. Invasion pathways for terrestrial vertebrates. Pp. 68-92 in Carlton, J., G. Ruiz, and R. Mack (eds.), *Invasive Species: Vectors and Management Strategies*. Island Press, Washington, DC.
- Kraus, F., and A. Allison. 2003. A new species of *Xenorhina* (Anura: Microhylidae) from western New Guinea. *Proceedings of the Biological Society of Washington* 116: 803-810.
- Allison, A., and F. Kraus. 2003. A new species of *Austrochaperina* (Anura: Microhylidae) from northern Papua New Guinea. *Journal of Herpetology* 37: 637-644.
- Kraus, F. 2003. New records of alien plants and animals in Hawaii. *Bishop Museum Occasional Papers* 74: 76-78.
- Goldberg, S.R., C.R. Bursey, and F. Kraus. 2003. New helminth records for the orange-spotted day gecko, *Phelsuma guimbeaui* and the gold dust day gecko, *Phelsuma laticauda* (Gekkonidae) from Hawaii. *Bishop Museum Occasional Papers* 74: 72-76.
- Kraus, F., and A. Allison. 2003. A new species of *Callulops* (Anura: Microhylidae) from Papua New Guinea. *Pacific Science* 57: 29-38.
- Kraus, F. 2002. Ecology and conservation of *Sida eggersii*, a rare tree endemic to the Virgin Islands. *Caribbean Journal of Science* 38: 184-194.
- Campbell, E.W., and F. Kraus. 2002. Neotropical frogs in Hawaii: status and management options for an unusual introduced pest. Pp. 316-318 in Timm, R.M., and R.H. Schmidt (eds.), *Proceedings of the 20th Vertebrate Pest Conference*. Univ. of California Press, Davis, California.
- Goldberg, S.R., C.R. Bursey, and F. Kraus. 2002. Seasonal variation in the helminth community of the brown anole, *Anolis sagrei* (Sauria: Polychrotidae), from Oahu, Hawaii. *American Midland Naturalist* 148: 409-415.

PUBLICATIONS, continued:

- Kraus, F. 2002. Introduced species and their control. Chapter 1.6.4.5 in: "Oceanic Islands", Vol. 3, *Encyclopedia of Life Support Systems*, UNESCO Publishing-Eolss Publishers, Paris, France, Oxford, UK.

- Kraus, F., and E. Campbell. 2002. Human-mediated escalation of a formerly eradicable problem: the invasion of Caribbean frogs in the Hawaiian Islands. *Biological Invasions* 4: 327-332.
- Kraus, F., and A. Allison. 2002. A new species of *Xenobatrachus* (Anura: Microhylidae) from northern Papua New Guinea. *Herpetologica* 58: 56-66.
- Kraus, F. 2002. New records of alien reptiles in Hawaii. *Bishop Museum Occasional Papers* 69: 48-52.
- Goldberg, S.R., F. Kraus, and C.R. Bursey. 2002. Reproduction in an introduced population of the brown anole, *Anolis sagrei*, from O'ahu, Hawaii. *Pacific Science* 56: 163-168.
- Kraus, F., and D. Cravalho. 2001. The risk to Hawaii from snakes. *Pacific Science* 55: 409-417.
- Schuett, G.W., E.W. Gergus, and F. Kraus. 2001. Phylogenetic reconstruction of male-male fighting in snakes: character mapping analysis. *Acta Ethologica* 4: 31-49.
- Kraus, F., and A. Allison. 2001. A review of the endemic New Guinea microhylid frog genus *Choerophryne*. *Herpetologica* 57: 214-232.
- Allison, A., and F. Kraus. 2001. A new species of *Platymantis* (Anura: Ranidae) from the island of New Ireland. *Copeia* 2001: 194-202.
- Loope, L.L., F.G. Howarth, F. Kraus, and T.K. Pratt. 2001. Newly emergent and future threats of alien species to Pacific birds and ecosystems. *Studies in Avian Biology* 22: 291-304.
- Kraus, F., and A. Allison. 2000. Two new species of *Cophixalus* from New Guinea. *Journal of Herpetology* 34: 535-541.
- Allison, A., and F. Kraus. 2000. A new species of frog of the genus *Xenorhina* (Anura: Microhylidae) from the north coast ranges of Papua New Guinea. *Herpetologica* 56: 285-294.
- Kraus, F., E.W. Campbell, A. Allison, and T. Pratt. 1999. *Eleutherodactylus* frog introductions to Hawaii. *Herpetological Review* 30: 21-25.
- Kraus, F., and W.M. Brown. 1998. Phylogenetic relationships of colubroid snakes based on mitochondrial DNA sequences. *Zoological Journal of the Linnean Society* 122: 455-487.
- Kraus, F., D.G. Mink, and W.M. Brown. 1996. Crotaline intergeneric relationships based on mitochondrial DNA sequence data. *Copeia* 1996:763-773.
- Kraus, F. 1996. *Ambystoma barbouri*. *Catalogue of American Amphibians and Reptiles* 621.1-621.3.
- Kraus, F. 1995. A revision of the Caribbean genus *Pseudopineria* (Gastropoda: Urocoptidae). *Malacological Review* 28: 107-117.
- Naylor, G. J., and F. Kraus. 1995. The relationship between \underline{s} and \underline{m} and the retention index. *Systematic Biology* 44: 559-562.
- Kraus, F. 1995. The conservation of unisexual vertebrates. *Conservation Biology* 9: 956-959.
- Collins, T., F. Kraus, and G. Estabrook. 1994. Compositional effects and weighting of nucleotide sequences for phylogenetic analysis. *Systematic Biology* 43: 449-459.
- Miyamoto, M.M., F. Kraus, P.J. Laipis, S.M. Tanhauser, and S.D. Webb. 1993. Mitochondrial DNA phylogenies of the eutherian order Artiodactyla. In: *Comparative Analysis of Phylogenetic Relationships among Mammals* (F.S. Szalay, M.C. McKenna, and M.J. Novacek, eds.). Princeton University Press, Princeton.
- Kraus, F., L. Jarecki, M.M. Miyamoto, S.M. Tanhauser, and P.J. Laipis. 1992. Mispairing and compensational changes during the evolution of mitochondrial ribosomal RNA. *Molecular Biology and Evolution* 9: 770-774.
- Allard, M.W., M.M. Miyamoto, L. Jarecki, F. Kraus, and M. Tennant. 1992. DNA systematics and evolution of the artiodactyl family Bovidae. *Proceedings of the National Academy of Sciences, USA* 89: 3972-3976.

PUBLICATIONS, continued:

- Kraus, F., P. K. Ducey, P. Moler, and M. M. Miyamoto. 1991. Two new trihybrid unisexual *Ambystoma* from Ohio and Michigan. *Herpetologica* 47: 429-439.

- Shaffer, H. B., J. M. Clark, and F. Kraus. 1991. Where molecules and morphology clash: phylogenetic relationships among North American *Ambystoma* (Caudata: Ambystomatidae). *Systematic Zoology* 40: 284-303.
- Kraus, F. 1991. Biodiversity conservation on Guana Island, British Virgin Islands. Pages 76-87 in Cambers, G. (ed.), *Proceedings of the regional symposium on public and private cooperation in national park development, August 23-25, 1991*. British Virgin Islands National Parks Trust, Roadtown, Tortola, BVI.
- Kraus, F., and M. M. Miyamoto. 1991. Rapid cladogenesis among the pecoran ruminants: evidence from mitochondrial DNA sequences. *Systematic Zoology* 40: 117-130.
- Kraus, F. 1991. Intra-individual ploidy consistency among unisexual *Ambystoma*. *Copeia* 1991: 38-43.
- Miyamoto, M. M., F. Kraus, and O. Ryder. 1990. Phylogenetic relationships of antlered deer determined from mitochondrial DNA sequences. *Proceedings of the National Academy of Sciences, USA* 87: 6127-6131.
- Kraus, F., and M. M. Miyamoto. 1990. Mitochondrial genotype of a unisexual salamander of hybrid origin is unrelated to either of its nuclear haplotypes. *Proceedings of the National Academy of Sciences, USA* 87: 2235-2238.
- Kraus, F., and J. W. Petranka. 1989. A new sibling species of *Ambystoma* from the Ohio River drainage. *Copeia* 1989: 94-110.
- Kraus, F. 1989. Constraints on the evolutionary history of the unisexual salamanders of the *Ambystoma laterale-texanum* complex as revealed by mitochondrial DNA analysis. Pages 218-227 in Dawley, R.M., and J.P. Bogart (eds.), *Evolution and Ecology of Unisexual Vertebrates*, Bulletin, New York State Museum, Albany, New York.
- Kraus, F., and R.A. Nussbaum. 1989. The status of the Mexican salamander *Ambystoma schmidti* Taylor. *Journal of Herpetology* 23: 78-79.
- Kraus, F. 1988. An empirical evaluation of the use of the ontogeny polarization criterion in phylogenetic inference. *Systematic Zoology* 37: 106-141.
- Kraus, F. 1985. A new unisexual salamander from Ohio. *Occasional Papers of the Museum of Zoology, University of Michigan*. No. 709: 1-24.
- Kraus, F. 1985. Unisexual salamander lineages in northwestern Ohio and southeastern Michigan: a study of the consequences of hybridization. *Copeia* 1985: 309-324.
- Goodman, S.M., F. Kraus, and S.M. Baha el Din. 1985. Records of terrestrial reptiles from Egyptian Red Sea Islands. *Egyptian Journal of Wildlife and Natural Resources* 6: 26-31.
- Schuett, G.W., D.L. Clark, and F. Kraus. 1984. Feeding mimicry in the rattlesnake *Sistrurus catenatus*, with comments on the evolution of the rattle. *Animal Behaviour* 32: 625-626.
- Kraus, F., and G.W. Schuett. 1982. A herpetofaunal survey of the coastal zone of northwest Ohio. *Kirtlandia* 36: 21-54.

MANUSCRIPTS IN PRESS:

- Duffy, D.C., and F. Kraus. In press. Taking Medawar's medicine: science as the "art of the soluble" for Hawaii's terrestrial extinction crisis. *Pacific Conservation Biology*
- Kraus, F. 2007. Alien Species Pp. xx-xx in Crother, B. (ed.), *Scientific and standard English names of amphibians and reptiles of North America north of Mexico, with comments regarding confidence in our understanding*. SSAR Herpetological Circular ##.
- Loope, L., and F. Kraus. In press. Preventing establishment and spread of invasive species in Hawaii: current status and needs for the future. (chapter for Pratt, T.K., C. T. Atkinson, P. C. Banko, J. D. Jacobi, and B. L. Woodworth (eds). *Conservation Biology of Hawaiian Forest Birds: Implications for Island Birds*).

MANUSCRIPTS IN PRESS, continued:

- Burse, C. R., S. R. Goldberg, and F. Kraus. In press. A new species of *Proteocephalus* (Cestoda: Proteocephalidae), description of the male of *Desmogathiema papuensis* (Nematoda: Quimperidae),

- and other endoparasites in *Sylvirana supragrisesa* (Anura: Ranidae) from Papua New Guinea. Comparative Parasitology. [PBS 2007-012]
- Burseley, C. R., S. R. Goldberg, and F. Kraus. In press. New species of *Parathelandros* (Nematoda: Pharyngodonidae) in *Nyctimystes trachydermis* (Anura: Hylidae) from Papua New Guinea. Journal of Parasitology [PBS 2007-011]
- Burseley, C. R., S. R. Goldberg, and F. Kraus. In press. *Saurokoilophila kinsellai* n. gen., n. sp. (Trematoda: Hemiuridae) in the lizard *Papuascincus stanleyanus* (Sauria: Scincidae) from Papua New Guinea. Comparative Parasitology. [PBS 2007-015]
- Goldberg, S.R., and F. Kraus. In press. Notes on reproduction in five species of *Emoia* (Squamata: Scincidae) from Papua New Guinea. Salamandra [PBS 2007-018]

MANUSCRIPTS SUBMITTED:

- Kraus, F. Using pathway analysis to inform prevention strategies for alien reptiles and amphibians. To be published as proceedings of international symposium on managing vertebrate invasive species, USDA/NWRC.
- Kraus, F. A remarkable case of anuran sexual size dimorphism: *Platymantis rhipiphalcus* is a junior synonym of *P. boulengeri*. (submitted to Journal of Herpetology)
- Burseley, C. R., S. R. Goldberg, and F. Kraus. Two new species of *Skrjabinodon* (Nematoda: Pharyngodonidae) in lizards from Papua New Guinea. (submitted to Helminthologica).
- Goldberg, S.R., and F. Kraus. Notes on reproduction in three species of *Sphenomorphus* (Squamata: Scincidae) from Papua New Guinea. (submitted to The Herpetological Bulletin)

MANUSCRIPTS IN PREPARATION:

- Kraus, F. Alien reptiles and amphibians: a global database, pathway analysis, and bibliography. To be published by Springer Science and Business Media B.V., Netherlands.
- Kraus, F. A new species of *Toxicocalamus* (Serpentes: Elapidae) from Sudest Island, Papua New Guinea.
- Goldberg, S.R., and F. Kraus. Notes on reproduction of *Carlia eothen* and *Lamprolepis smaragdina* (Squamata: Scincidae) from Papua New Guinea.

CURRICULUM VITAE

SHELLEY ANNE JAMES, PhD

Assistant Botanist & Laboratory Manager
Pacific Center for Molecular Biodiversity
Bernice P. Bishop Museum
1525 Bernice Street, Honolulu, HI 96817
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EDUCATION:

- 1994-8 Degree of Doctor of Philosophy
The University of Western Australia, Department of Botany
- 1993 Bachelor of Science with First Class Honours
The University of Western Australia, Department of Botany
- 1990-2 Bachelor of Science
The University of Western Australia
Majors in Botany and Soil Science

CURRENT OCCUPATION:

2001-present. Assistant Botanist & Laboratory Manager, Pacific Center of Molecular Biodiversity, Bishop Museum, Honolulu, HI 96817.

Tasks include: Management of Pacific Center for Molecular Biodiversity; extraction of plant genomic DNA and research using molecular techniques; development and maintenance of PCMB collection database; educational training in molecular techniques; curation of *Herbarium Pacificum* and PCMB collections; field survey and botanical contracts; creation of computerized keys for the identification of Hawaiian species using LucID (University of Queensland, Australia); development and maintenance of Bishop Museum Science Division and Hawaii Biological Survey web-sites; development and implementation of internships and educational programs.

ADJUNCT APPOINTMENTS:

2007-present: Affiliate Graduate Faculty at the University of Hawaii at Manoa, Honolulu, HI

PAST EMPLOYMENT/TEACHING:

- 1999-2001. Postdoctoral Research Fellow at the Department of Botany, University of Hawaii and Hawaii Agriculture Research Center. Functional convergence and constraints in the regulation of transpiration and carbon assimilation in tropical forest canopy trees.
2001. Lecturer, Botany 453 - Plant Ecology and Environmental Measurements. Series of ten lectures given in the Department of Botany, University of Hawaii.
- 2001-2. Interpreter of the Edge of the Reef exhibit at the Waikiki Aquarium.
2001. Teaching docent for the 4th grade program at the Hawaii Nature Center.
- 1995-9. Maintenance of taxonomic gardens and glasshouses for the Department of Botany, The University of Western Australia.
- 1998-9. Research assistant for Associate Professor J. McComb, Biological Sciences, Murdoch University. Emasculating and pollinating die-back resistant jarrah (*Eucalyptus marginata*) crosses. Measurement of tree height and survival in *Eucalyptus* salinity-tolerance field trials.
- 1998-9. Research assistant in the Botany Department, The University of Western Australia. Preparation of samples for natural isotope analysis, and the collection and sorting of roots within soil cores.
- 1998-9. Formatting and editing Lefroy, E.C., R.J. Hobbs, M.H. O'Connor, and J.S. Pate (eds) "Agriculture as a Mimic of Natural Ecosystems." Kluwer, The Netherlands. Editing manuscripts for Professor J.S. Pate, Department of Botany, The University of Western Australia.
1992. Summer scholarship, Department of Botany, The University of Western Australia. Leaf structural features of native Western Australian plant species in relation to their photosynthetic performance. Supervisors - Dr D.T. Bell (UWA) and Dr W.K. Smith (University of Wyoming, USA).
1991. Summer scholarship, Department of Botany, The University of Western Australia. Rhizome starch content of Western Australian seagrass species (*Posidonia australis*, *Posidonia sinuosa*, *Amphibolis antarctica* and *Amphibolis griffithii*). Supervisor - Dr. D.I. Walker.

1993-9. Teaching assistant in the Department of Botany, The University of Western Australia -
 First year courses.
 Biology first year laboratory course, 1996, 1998-9.
 Botany first year laboratory course, 1994, 1996, 1998-9.
 Kings Park WA field excursion, 1993, 1995, 1998.
 Yule Brook field excursion, 1994.
 Second year courses.
 Plant Form and Function laboratory course, 1994, 1996, 1998-9.
 Plant Processes and Adaptation laboratory course, 1994-1996.
 Third year courses.
 Plant and Animal Interactions laboratory course, 1994, 1996.
 Quantitative Plant Ecology, 1999.
 1996. Biology and botany tutor at St Thomas More College, The University of Western Australia, Nedlands.

RESEARCH FUNDING, CONTRACTS & AWARDS:

Population genetics of *Delissea waianaeensis* Lammers. (Campanulaceae) and parental identification of new recruits. DOD. \$20,000. 2008.
 Evolution of Nemobiinae Crickets in the Hawaiian Islands. Subcontract with University of Hawaii. \$11,600. 2008.
 Open contract with AECOS for field and herbarium related projects, 2007-2008.
 Five-year reviews for 56 plant species. USFWS. \$60,480. 2007-2008.
 Removal of alien species, stabilization and outplanting of native plants in Kalauao Valley, Oahu. USFWS. \$20,000. 2006-2008.
 Stabilization and recovery of *Bidens micrantha* subsp. *kaleaha* on Lanaihale, Lanai. USFWS. \$32,400. 2006-2008.
 Pacific Basin Checklist, taxonomic concepts and associated data maintenance. USDA/NRCS. \$30,000. 2006-2007.
 Propagation of *Bidens micrantha* subsp. *kaleaha* for outplanting on Lanaihale, Lanai: and educational and community approach. Lanai Community Benefit Fund. \$2,500. 2006-2007.
 Acquisition of equipment for genetic analyses and long-term DNA storage. Major Research Instrumentation Program, National Science Foundation. \$101,582. 2004-2007.
 Australian Postgraduate Award, 1994 - 1997.
 Jean Gilmore Bursary, The Australian Federation of University Women - South Australia, 1996.
 The University of Western Australia Research Committee Travel Award for Postgraduate Research Students, 1995.
 The University of Western Australia Graduates Association Postgraduate Research Travel Award, 1994.
 Jennifer Arnold Memorial Research Grant, 1993.
 W.E. Blackall Prize in Botany, The University of Western Australia, 1992.
 Maurice Buchan Johnson Prize in Mycology, The University of Western Australia, 1991.
 Convocation Prize in Science, Convocation of The University of Western Australia, 1991.

REFEREED PUBLICATIONS:

HOWARTH, F.G., S.A. JAMES, W.MCDOWELL, D.J. PRESTON and C.T. IMADA (2007) Identification of roots in lava tube caves using molecular techniques: implications for conservation of cave faunas. *Journal of Insect Conservation* 11: 251-261.
 MURAKAMI, K., S.A. JAMES, J.E. RANDALL, and A.Y. SUZUMOTO. 2007. Two hybrids of Carangid fishes of the Genus *Caranx*, *C. ignobilis* x *C. melampyrgus* and *C. melampyrgus* x *C. sexfasciatus*, from the Hawaiian Islands. *Zoological Studies* 46: 186-193.
 JAMES, S.A. and A.Y. SUZUMOTO. 2006. Nonnative occurrence of *Anguilla marmorata* in Hawai'i: identification using morphological and molecular characters. *Bishop Museum Occasional Paper* 86: 55-60.
 HANDLER, A. and S.A. JAMES. 2006. *Anguilla marmorata* Quoy and Gaimard (Giant Mottled Eel) discovered in a new location: natural range expansion or recent human introduction? *Pacific Science* 60: 109-115.
 JAMES, S.A., C.F. PUTTOCK, S. CORDELL, AND R.P. ADAMS. 2004. Morphological and genetic variation in *Metrosideros polymorpha* (Myrtaceae) on Hawai'i. *New Zealand Journal of Botany* 42: 263-270.
 MEINZER, F.C., S.A. JAMES, and G. GOLDSTEIN. 2004. Dynamics of transpiration, sap flow and use of stored water in tropical forest canopy trees. *Tree Physiology* 24: 901-909.

- BARTEL, J.A., R.P. ADAMS, S.A. JAMES, L.E. MUMBA and R.N. PANDEY. 2003. Variation among *Cupressus* species from the western hemisphere based on Random Amplified Polymorphic DNAs (RAPDs). *Biochemical Systematics and Ecology* 31: 693-702.
- ADAMS, R.P., R.N. PANDEY, M.R. DAFFORN and S.A. JAMES. 2003. Vetiver DNA fingerprinted cultivars: Effects of environment on growth, oil yields and composition. *Journal of Essential Oils Research* 15: 363-371.
- ADAMS, R.P., L.E. MUMBA, S.A. JAMES, R.N. PANDEY, T. GAUQUELIN and W. BADRI. 2003. Geographic variation in the leaf essential oils and DNA fingerprints (RAPDs) of *Juniperus thurifera* L. from Morocco and Europe. *Journal of Essential Oils Research* 15: 148-154.
- MEINZER, F.C., S.A. JAMES, G. GOLDSTEIN, and D. WOODRUFF. 2003. Whole-tree water transport scales with sapwood biophysical properties in tropical forest canopy trees. *Plant Cell and Environment* 26: 1147-1155.
- JAMES, S.A., F.C. MEINZER, G. GOLDSTEIN, D. WOODRUFF, T. JONES, T. RESTOM, M. MEJIA, M. CLEARWATER, and P. CAMPANELLO. 2003. Axial and radial water transport and internal water storage in tropical forest canopy trees. *Oecologia* 134: 37-45.
- JAMES, S.A., M.J. CLEARWATER, F.C. MEINZER, and G. GOLDSTEIN. 2002. Variable length heat dissipation sensors for the measurement of sap flow in trees with deep sapwood. *Tree Physiology* 22: 277-283.
- JAMES, S.A., D.T. BELL, and A. ROBSON. 2002. Growth response of highly tolerant *Eucalyptus* species to alkaline pH, bicarbonate and low iron supply. *Australian Journal of Experimental Agriculture* 42: 65-70
- JAMES, S.A. and D.T. BELL. 2001. Leaf morphological and anatomical characteristics of heteroblastic *Eucalyptus globulus* ssp. *globulus* (Myrtaceae). *Australian Journal of Botany* 49: 259-269.
- JAMES, S.A. and D.T. BELL. 2000. Leaf orientation, light interception, and conductance of *Eucalyptus globulus* ssp. *globulus* leaves. *Tree Physiology* 20: 815-823.
- JAMES, S.A. and D.T. BELL. 2000. Influence of light availability on leaf structure and growth of two *Eucalyptus globulus* ssp. *globulus* provenances. *Tree Physiology* 20: 1007-1018.
- JAMES, S.A., W.K. SMITH, and T.C. VOGELMANN. 1999. Mesophyll structure and chlorophyll distribution in ontogenetically different leaves of *Eucalyptus globulus* ssp. *globulus* (Myrtaceae). *American Journal of Botany* 86:198-207.
- JAMES, S.A. and D.T. BELL. 1996. Leaf orientation in juvenile *Eucalyptus camaldulensis*. *Australian Journal of Botany* 44: 139-156.
- JAMES, S.A. and D.T. BELL. 1995. Morphology and anatomy of juvenile leaves of geographically widespread clones of *Eucalyptus camaldulensis*. *Australian Journal of Botany* 43: 415-433.

ABSTRACTS:

- JAMES, S., F.OKAMOTO, and A.TSUNEYOSHI. (2007) Genetic variation in the endemic Hawaiian *Gardenia brighamii*: Conservation and horticultural implications. Proceedings of the Hawai'i Conservation Conference, Honolulu HI. pp. 67.
- CROOM, H., F.STONE, S.JAMES, and F.HOWARTH. (2007) Patterns of speciation among endemic Hawaiian Nemobiinae crickets: A molecular approach for conservation. Proceedings of the Hawai'i Conservation Conference, Honolulu HI. pp. 51.
- LONGENECKER, K., H. BOLICK, D. MIYAMOTO, K. VASQUEZ, and S. JAMES. 2006. Skeletons and Barcodes: Methods of identifying Hawaiian fish species as conservation tools. Proceedings of the Hawai'i Conservation Conference, Honolulu HI. pp. 60.
- JAMES, S.A., K. IGETA, A. HARBOTTLE, H. BOLICK, P. VAN DYKE, and C.F. PUTTOCK. 2005. Hawaiian kalo: a computer interactive identification key assisting with the conservation of *Colocasia esculenta* varieties in Hawai'i. Proceedings of the Hawai'i Conservation Conference, Honolulu HI. pp. 63.
- JAMES, S.A., C.F. PUTTOCK, C.T. IMADA, A. HARBOTTLE, B. KENNEDY, M. LEGRANDE, L. CRAGO, J. FISHER, and H. LENNSTROM. 2005. Education and training: a work experience strategy for Hawaiian conservation. Proceedings of the Hawai'i Conservation Conference, Honolulu HI. pp. 62.
- JAMES, S., F. HOWARTH, C. PUTTOCK, W. MCDOWELL, and C. IMADA. 2004. Management implications for the identification of lava tube cave roots using molecular techniques. Proceedings of the 2004 Hawai'i Conservation Conference, Honolulu HI. pp. 32.
- JAMES, S.A., S. CORDELL, C.F. PUTTOCK, and R.P. ADAMS. 2003. Genetic and morphological variation of *Metrosideros polymorpha* (Myrtaceae) on Hawai'i. Proceedings of the 2003 Hawai'i Conservation Conference, Honolulu HI. pp. 26.

ABSTRACTS, CONTINUED:

- JAMES, S.A., A.Y. SUZUMOTO, and C.F. PUTTOCK. 2003. Using DNA analysis to identify a carnivorous alien freshwater eel in Hawai'i. Proceedings of the 2003 Hawai'i Conservation Conference, Honolulu HI. pp. 25-26.
- JAMES, S.A., S. CORDELL, R.P. ADAMS, and C.F. PUTTOCK. 2002. Genetic and morphological variation of *Metrosideros polymorpha* (Myrtaceae) from different habitats on Hawai'i. Proceedings of Molecular Genetics and Ecology of Plant Evolution Conference, Vancouver, Canada.
- JAMES, S.A. 2002. Spatial patterns of water movement, stored water and their implications for stomatal regulation. *3rd International Canopy Conference: Science, policy and utilisation. Program and Abstract Handbook*. pp. 48-49. (Abstract).
- JAMES, S.A. 2001. Hanging out with the monkeys and iguanas – determining the water use of tropical trees. *Proceedings of the Royal Society of Western Australia September, 2001*.
- JAMES, S.A. 1999. Comparative structure and function of two provenances within *Eucalyptus globulus* Labill. ssp. *globulus*. *Proceedings of the Royal Society of Western Australia May, 1999*. (Abstract).
- JAMES, S.A., D.T. BELL, and W.K. SMITH. 1995. Ecophysiological significance of juvenile and adult leaves in Tasmanian blue-gum (*Eucalyptus globulus*). *Bulletin of the Ecological Society of America* 76: 344. (Abstract).
- JAMES, S.A. 1999. Comparative leaf structure and function, and the growth of two provenances within *Eucalyptus globulus* Labill. ssp. *globulus*. *Bulletin of the Ecological Society of Australia* 29: (Abstract).

OTHER PUBLICATIONS:

- GUINTEHER, E.B. and S.A. JAMES. 2007. Botanical surveys at seven meteorological tower sites on Lanai, Hawaii. Report prepared for TetraTech, Honolulu.
- JAMES, S.A., K. IGETA, A. HARBOTTLE, H. BOLICK, and P. VAN DYKE. 2006. Hawaiian kalo: and identification guide for taro in the Hawaiian Islands. HBS Contribution No. 2006-004.
<http://hbs.bishopmuseum.org/botany/taro/>
- CRAGO, L.M., C.F. PUTTOCK, and S.A. JAMES. 2005. Riparian Plant Restoration: a management tool for habitat restoration in Hawai'i, version 2. HBS Contribution No. 2005-006.
<http://hbs.bishopmuseum.org/botany/riparian>
- CRAGO, L.M., C.F. PUTTOCK, and S.A. JAMES. 2004. Riparian Plant Restoration: a management tool for habitat restoration in Hawai'i. HBS Contribution No. 2004-005.
<http://hbs.bishopmuseum.org/botany/riparian>.
- HOWARTH, F.G., D.J. PRESTON and S.A. JAMES. 2003. Biological assessment of the lava tubes of the Hiluhilu Development Area, Kau, North Kona, Hawai'i. Report for Hiluhilu Development LLC, Contribution Number 2003-023 to the Hawaii Biological Survey.
- JAMES, S.A., C.F. PUTTOCK and I.A. ABBOTT. 2002. A Key to Common Hawaiian Marine Algae. HBS Contribution No. 2002-029.
http://www.bishopmuseum.org/research/natsci/botany/products_files/algae.htm
- Editor of *Herbarium Pacificum News* 2003-2005.
More than 150 sequences submitted to Genbank.

THESES:

- JAMES, S.A. 1998. Comparative leaf structure and function, and the growth of two provenances within *Eucalyptus globulus* Labill. ssp. *globulus*. PhD Thesis, The University of Western Australia, Perth.
- JAMES, S.A. 1993. Morphological, anatomical and growth characteristics of *Eucalyptus camaldulensis* Dehnh. Honours Thesis, The University of Western Australia, Perth.
- JAMES, S.A. 1992. Differences among *Eucalyptus* species in response to alkalinity and high bicarbonate concentrations. Degree Thesis, The University of Western Australia, Perth.

PROFESSIONAL REVIEW OF PUBLICATIONS:

- Tree Physiology, 2000-2005, Editorial Review Board, 2002-2003; New Phytologist, 2005; New Zealand Journal of Botany, 2005; Journal of Environmental Management, 2005; Australian Journal of Botany, 2001-2008; Annals of Botany, 2006.
Panelist for the National Science Foundation, 2006-2007.

GRADUATE STUDENTS:

Holly Bolick, Masters Thesis, University of Hawaii
Aurora Kagawa, Masters Thesis, University of Hawaii
Mashuri Waite, PhD Thesis, University of Hawaii

PRESENTATIONS:

University of Hawaii Department of Botany Seminar Series, 2005 & 2007.
Hawaii Conservation Conference. Education and Training: a work experience strategy for Hawaiian conservation, 2005.
Bishop Museum Seminar Series, 2002, 2004, 2005.
Presentation at the Taro Identification Workshop, 2003 & 2006 at the Amy Greenwell Ethnobotanical Gardens, Captain Cook, Hawai'i
Presentation at the Crustose Coralline Algae Workshop, 2003, University of Hawaii.
http://www.hawaii.edu/ssri/hcri/rp/abbott/2003_09_11-12/quest/01.htm
Poster presentations at the Hawaii Conservation Conference, Honolulu, 2003-7.
Poster presentation at the Molecular Genetics and Ecology of Plant Evolution Conference, Vancouver, Canada, 2002.
Invited speaker at the 3rd International Canopy Conference, Cairns Australia, 2002, Water Uptake and Transport Symposium.
Invited speaker at the Royal Society of Western Australia Postgraduate Symposium, 1999.
Graduates Conference as part of the National Science Week, The University of Western Australia, 1999.
Department of Botany, The University of Western Australia Seminar Series, 1999.
Ecological Society of America Annual Meeting, Snowbird, Utah, USA, 1995.

COURSES UNDERTAKEN:

GIS150: Introduction to GIS/GPS, Windward Community College, 2006.
Hawaiian Plant Genera. Department of Botany, University of Hawaii, 2004
Intensive Course in Molecular Systematics, University of Reading, Reading, UK, 2003.
NAUI SCUBA Certification, 2003.
4WD driving course at Murdoch University, 1999.
Scanning Electron Microscopy and Environmental Scanning Electron Microscopy Courses, 1993. Centre for Microscopy and Microanalysis, UWA.

SERVICE TO THE BISHOP MUSEUM AND THE COMMUNITY:

Served on two promotion committees, 2006, and search committee, 2007.
Serving on recycling committee, Bishop Museum, 2006-2008.
Tours of PCMB to new staff and the general public.
Served as judge at the State Science Fair and other local Science Fairs, 2004-2008.
Annual participation in Career Days at local primary and middle schools.
Volunteer at the Bishop Museum both professionally (2001) and for fundraising events (2002-2007).
Weekly volunteer at Na Pohaku o Hauwahine restoration site, 2005-2007.
Board member of the Hawaii Botanical Society, 2007.
Research collaboration with Bishop Museum staff at the Kalihi Campus and Amy Greenwell Ethnobotanical Gardens, Hawaii.
Collaborating with University of Hawaii faculty in NSF NEON proposal, 2007.

OTHER SKILLS:

Experience in -
DNA extraction, PCR, sequence & fingerprint analysis, molecular laboratory techniques
Preparing and sectioning resin embedded, frozen and fresh plant material
Laboratory and herbarium management; georeferencing, database management
Light microscopy; scanning (conventional, cryo- and environmental) and transmission electron microscopy
Plant nutrient and soil analysis
Licor, ADC and porometer gas exchange systems; datalogging systems
Propagation and maintenance of plants, including glasshouse maintenance
Vegetation survey
SCUBA

OTHER SKILLS, CONTINUED:

Experienced user of Microsoft and Macintosh operating systems. Extensive use of word processing (Microsoft Word, Adobe Acrobat), graphics and image analysis (SigmaPlot, Adobe Photoshop, Corel Draw), sequence analysis software (DNA*, BioEdit, PAUP*, McClade) spreadsheet and database software (Microsoft Excel, Access), bibliographical (Endnote), GIS (ArcView), and statistical (Minitab, Canoco) packages.

Experienced in the use of electronic mailing systems (Outlook, Eudora) and use of World Wide Web (Netscape, Explorer, Dreamweaver). Development and maintenance of web for Bishop Museum. Currently holds a Class 3 Hawai'i state driver's licence.

PROFESSIONAL MEMBERSHIPS:

Member of the Ecological Society of Australia, 1993-2008
Ecological Society of America, 1995-2008
Royal Society of Western Australia, 1993-2008
Botanical Society of America, 1994-2008
American Institute of Biological Sciences, 2000-2008.

Board member of the Hawaii Botanical Society, 2007.

Member of the Kaneohe Yacht Club, 2004-2007. Active member of the Race Committee, I-14 Fleet Captain, 2008.

CURRICULUM VITAE

CLYDE T. IMADA

Research Specialist
Department of Natural Sciences/Botany
Bernice P. Bishop Museum
1525 Bernice St. Honolulu, HI 96817
Phone: (808) 848-4175
Email: cimada@bishopmuseum.org

WORK EXPERIENCE:

2003–Present. **Research Specialist**. Department of Natural Sciences/Botany, Bishop Museum, Honolulu, Hawai'i.

1988–2003. **Research Technician**, Department of Natural Sciences/Botany, Bishop Museum. Principal assistant for *A Tropical Garden Flora* project (Staples & Herbst, in press); establishment and maintenance of checklist databases for native, naturalized, and cultivated plants in Hawai'i, plant ID, phone queries; participation in botanical field surveys.

1984–1988. **Curatorial Technician**, Department of Natural Sciences/Botany, Bishop Museum. Assistant on *Manual of the Flowering Plants of Hawai'i* project (Wagner, Herbst & Sohmer, 1990); participation in botanical field surveys; public outreach; curation of plant collection in Herbarium Pacificum and of private bryophyte collection of Dr. William J. Hoe.

1983–1984. **Gardener**, Greg Boyer Hawaiian Landscapes, Kahalu'u, Hawai'i. Grounds maintenance of private residences, including establishment of fertilization programs, diagnosis and treatment of plant problems.

1982–1983. **Laboratory & Field Assistant**, Department of Horticulture (Dr. Fred D. Rauch), University of Hawaii at Manoa, Honolulu, Hawai'i. Data-taking for greenhouse research projects conducted by staff and graduate students; maintenance of experimental plants.

FIELD EXPERIENCE:

Extensive botanizing and plant collecting on Kaua'i, O'ahu, Moloka'i, Lana'i, Maui, Kaho'olawe, and Hawai'i, 1974–present.

Botanist, Pacific Islands Ecosystems at Risk (PIER) weed assessment of the Republic of Kiribati, September 2003.

Botanist on Bishop Museum surveys of Waihe'e & Kahalu'u Valleys, O'ahu Forest National Wildlife Refuge, Manana Valley, Kalua'a Gulch, and Kalauao Valley (all under the auspices of the Ko'olau Mountains Watershed Partnership (O'ahu, 2003–2007), Makakilo Castle & Cooke (O'ahu, 2004), Waipi'o Valley (Hawai'i, 2001, 1999); Kane'ohe Bay watershed (2001); Bond Estate (North Kohala, 1999); Kealia Pond (Maui, 1998); Pouhala Marsh (O'ahu, 1996); Halawa Valley (O'ahu, 1994); Kalihi Valley pipeline and reservoir (O'ahu, 1988); Mo'omomi sand-mining project (Moloka'i, 1987); Puna District 69 KV transmission corridor (Hawai'i, 1987).

Field botanist with Char & Associates, 1985–present, assisting on botanical surveys for environmental assessments on Kaua'i, O'ahu, Moloka'i, Maui, and Hawai'i.

Botanist, Native Hawaiian Culture and Arts Program grant, *A statewide assessment of populations of olona* (*Touchardia latifolia*), *native fiber plant* (Puanani Wong, Contractor and Principal Investigator, contract 90.11), April 1991–June 1993.

Field assistant, Ta'u, American Samoa, vegetation assessment, January 1991; Guam, golf course assessment, August 1990; 'Eua, Tonga, vegetation assessment for proposed national park, June 1990; 'Eua, Tongatapu, and Vava'u, Tonga, ethnobotanical studies, July 1988.

EDUCATION:

B.S., Horticultural Technology, 1983, University of Hawaii at Manoa, Honolulu, HI

B.A., Geography, 1977, University of Hawaii at Manoa

SELECTED PUBLICATIONS:

- Imada, C., A. Lau, D. Frohlich, and B. Kennedy. 2007. Botanical inventory of Board of Water Supply lands, Waihe'e and Kahalu'u Valleys, windward O'ahu. Hawaii Biological Survey Contrib. 2007-017, Bishop Museum, 37 pp.
- Imada, C. T., D. Frohlich, A. Lau, and R. Smith. 2007. Implementing early detection in Hawai'i, year one. Hawaii Biological Survey Contrib. 2007-016, Bishop Museum, 51 pp.
- Imada, C. T. 2007. New Hawaiian plant records for 2005–2006. Bishop Mus. Occas. Pap. 96: 34–41.
- Imada, C.T., and M. LeGrande. 2006. Botanical inventory of Kalauao Valley, City & County of Honolulu, O'ahu, Hawai'i. Hawaii Biological Survey Contrib. 2006-032, Bishop Museum, 33 pp.
- Imada, C.T., and M. LeGrande. 2006. Botanical inventory of O'ahu Forest National Wildlife Refuge, Waipi'o, O'ahu. Hawaii Biological Survey Contrib. 2006-019, Bishop Museum, 35pp.
- Puttock, C. F., D. R. Herbst, and C. T. Imada. 2006. Part II, Wetland plant identification. *In*: Erickson, T. A., and C. F. Puttock (eds.), Hawai'i wetland field guide: an ecological and identification guide to wetlands and wetland plants of the Hawaiian Islands. Environmental Protection Agency, Honolulu, 293 pp.
- Space, J. C. Space, and C. T. Imada. 2004. Report to the Republic of Kiribati on invasive plant species on the islands of Tarawa, Abemama, Butaritari and Maiana. USDA Forest Service, Institute of Pacific Islands Forestry & Bishop Museum, Pacific Biological Survey report 2003-006, 103 pp.
- Lennstrom, H.A., and C. T. Imada. 2004. Keaiwa Heiau and 'Aiea ahupua'a: documentation of native and Polynesian-introduced plants. B.P. Bishop Museum, 60 pp.
- Englund, R.A., C. T. Imada, D.J. Preston, and K. Arakaki. 2003. Kane'ohe Bay, O'ahu stream estuary studies: final report. Hawaii Biological Survey report 2003-013, Bishop Museum.
- Puttock, C.F., C. T. Imada, M. LeGrande, S. Jansen, and B. Kennedy. 2003. Botanical survey of 1325 acres of Hana Ranch, East Maui District, County of Maui. Hawaii Biological Survey report 2003-004, Bishop Museum.
- Staples, G.W., D.R. Herbst, and C.T. Imada. 2000. Survey of invasive or potentially invasive cultivated plants in Hawai'i. Bishop Mus. Occas. Pap. 65: 1–35.
- Imada, C.T. 2000. Vegetation survey of the lower part of Waipi'o Valley, pp. 78–107, 125–132. *In* Olszewski, D. I. (ed.), The mahele and later in Waipi'o Valley, Hawai'i, Research Program, Bishop Museum.
- Cowie, R.H., C.T. Imada, A. Allison, and K.T. Arakaki. 1999. Biological survey of the Bond Historic District, North Kohala, island of Hawai'i. Final report. Hawaii Biological Survey, Bishop Museum, Honolulu, 57 pp.
- Imada, C.T., W.L. Wagner, and D.R. Herbst. 1989. Checklist of native and naturalized flowering plants of Hawai'i. Bishop Museum Occasional Papers 29: 31–87.

CURRICULUM VITAE

KATHLEEN S. "PUMEHANA" IMADA

1525 Bernice Street

Telephone: (808) 848-4198 Cell: (808) 221-6737

Email: pumehana@bishopmuseum.org

EMPLOYMENT HISTORY:

- 2001 – current Bernice P. Bishop Museum
Collections technician in Department of Natural Sciences Vertebrate
Zoology
- 2000 – 2001 Bernice P. Bishop Museum
Special exhibit guide in Education Department
- 1985 – 2001 Bruce Soll, MD, Inc.
Office manager (job required nursing, transcription, and billing skills as sole
staff)
- 1980 – 1985 Oishi, Wachi & Inamasu, Inc.
Head nurse
- 1971 – 1980 Kuakini Medical Center
Staff nurse for a medical-surgical ward and oncology ward
- 1967 – 1971 JC Penny
Sales clerk
- 1967, summer Honolulu Board of Water Supply
Secretarial assistant

EDUCATION:

- 1967 Kaimuki High School
- 1971 University of Hawaii at Manoa, B.S. in Nursing

CULTURAL EDUCATION:

- 15 years training as hula dancer
'uniki graduate at level of expert dancer, 1994
'uniki graduate at level of chanter, 2000
Training as kumu hula
12 years training as lauhala weaver

TEACHING EXPERIENCE:

- Beginning and intermediate lauhala weaving classes, Bernice P. Bishop
Museum, 2004 – current
- Beginning lauhala weaving and hula classes, International Hospitality Center
au pair program – ad hoc thru 2005

ADDITIONAL INFORMATION:

- Volunteer as docent at Bernice P. Bishop Museum, 1990 – 1994

CURRICULUM VITAE

SHEPHERD P. MYERS

Collections Manager
Department of Entomology
Bernice P. Bishop Museum
1525 Bernice Street, Honolulu, HI 96817
Telephone (808) 848-4196 Fax (808) 847-8252
shepherd.myers@bishopmuseum.org

PROFESSIONAL PREPARATION:

B.Sc. Entomology, 2002, Cornell University

APPOINTMENTS:

2006 – present	Collections Manager, Department of Entomology, Department of Natural Sciences, Bishop Museum, Honolulu, Hawaii
2006 – present	Affiliate with University of Hawaii Museum
2004-2006	Collections Technician/Research Assistant, University of Hawaii Insect Collection, University of Hawaii, Honolulu
2002-2003	Collections Technican, Cornell University Insect Collection, Cornell University, Ithaca
2002	Research Assistant, Cornell Agricultural Research Station, Cornell University
2001	Volunteer, Cornell University Insect Collection, Cornell University, Ithaca
2000-2002	Volunteer, L. H. Bailey Hortorium Library, Cornell University, Ithaca

PROFESSIONAL PUBLICATIONS:

Scientific illustrations in the following publications:

Cover Illustration of *Hyposocoma* sp. Proceedings of the Hawaiian Entomological Society. Volume 38, December 2006

Almeida, R.P.P. and Purcell, A.H. 2006. Patterns of *Xylella fastidiosa* colonization on the precibarium of leafhopper vectors relative to transmission to plants. Annals of the Entomological Society of America 99: 884-890 (schematic drawing of mouth parts, pg 885)

Final illustration in the lab manual for Entomology 322 exercises 6& 7
http://www.entomology.cornell.edu/Faculty_Staff/Danforth/322LabManual/lab06_07.pdf

SYNERGISTIC ACTIVITIES:

i. Research experience/Curatorial work

Five years experience in the management of arthropod collections, including curation, database development, loan transactions, and supervision of technicians and volunteers; field work in Hawaii; experience in the rearing of arthropods under laboratory conditions.

ii. Educational and community outreach

Leads tours of the Insect Collection at the Bishop Museum to visiting researchers and the general public; instruction and demonstration of basic line drawing technique for Introductory Entomology lab class at University of Manoa, and a summer program for Native Hawaiian

Middle School students; mentored a native Hawaiian High school student in the production of high quality illustrations for publication in 2006; Science Fair Judge at local and state level; Involved in the education of the general public about insects with Ka Mea Kolo Entomology club.

COLLABORATORS AND OTHER AFFILIATIONS:

i. Collaborators and co-editors:

Ronald Englund (Kamehameha Schools); Dan Rubinoff (University of Hawaii).

ii. Graduate Advisors and Postdoctoral Sponsors: None.

iii. Thesis Advisor and Postgraduate-Scholar Sponsor: None.

TRAFFIC SPECIALISTS

DICK KAKU
Principal

EXPERIENCE

Traffic Engineering

Conducted traffic circulation studies for downtown redevelopment projects in Los Angeles, Upland, Bakersfield, Inglewood, Baldwin Park, San Diego, Carlsbad, Oceanside and Garden Grove, California; Scottsdale and Phoenix, Arizona; Honolulu, Waikiki, Kihei, and Lahaina, Hawaii; Richmond, Virginia; Memphis, Tennessee; and Seoul, Korea. Conducted numerous traffic impact and site access studies for shopping centers, planned unit developments, office complexes, and recreational facilities in cities throughout the United States; Caracas, Venezuela; Zurich, Switzerland; and Seoul, Korea.

Parking

Conducted parking studies for the Cities of Scottsdale and Phoenix, Arizona; Ojai, Inglewood, Baldwin Park, Los Angeles, Irvine, Glendale, Encinitas, Solana Beach, Santa Monica, Huntington Beach, Whittier, and West Hollywood, California; Lahaina and Honolulu, Hawaii; Annapolis, Maryland; and Seoul, Korea. Conducted parking studies for colleges and universities, including Cal Poly Pomona, California State University Long Beach, California State University Northridge, California State University San Bernardino, Claremont Graduate University, and Santa Monica College. Also conducted parking studies for private developments, museums, hospitals, and recreational facilities in cities throughout California, Arizona, and Hawaii.

Transportation Planning

Supervised transportation planning element of community plan studies for Hollywood, Westwood/West Los Angeles, Tri-Cities, Venice, Encino, Van Nuys, Northridge, the Warner Center, Chatsworth/Porter Ranch, the Ventura/Cahuenga Boulevard Corridor and Hollywood Redevelopment areas of Los Angeles. Acted as project manager for transportation planning studies in Oahu, Hawaii, Maui, and Kauai Counties in Hawaii as well as in Kern, Riverside, Tulare, and San Bernardino Counties in California.

Master Plan and Circulation Studies

Prepared circulation element of highway master plans for California State University San Bernardino, East Los Angeles College, Mission College, Pierce College, and West Los Angeles College in California. Prepared master plans for Kauai County, Maui County, and the Ewa region in Honolulu. Conducted circulation studies for the Cities of Los Angeles, Pasadena, Redondo Beach, Santa Monica, and West Hollywood, California.

WORK EXPERIENCE

- Years of Experience – 36
- Years with Fehr & Peers – 23

EDUCATION

- Master of Science, Civil Engineering, University of California at Berkeley, 1967
- Bachelor of Science, Civil Engineering, Cornell University, 1966

AFFILIATIONS

- Traffic Engineer, 1979 (CA No. TR494)
- American Society of Civil Engineers
- Institute of Transportation Engineers
- Transportation Research Board

Highway/Corridor Studies

Supervised alternatives analyses for the Route 10/60 Corridor, the I-710 Corridor, the North San Gabriel Valley Corridor, the Glendale Boulevard Corridor, the Crenshaw Corridor, and the Route 60 Truck Lane study in Los Angeles County; the Route 30 Corridor study in Los Angeles and San Bernardino Counties; the North/South corridor in Honolulu; Kern River Canyon, Route 202 near Tehachapi, and Route 33 near Taft in Kern County.

TDM/TSM Planning

Supervised the development of the Transportation and Parking policy for employees of the County of Los Angeles. Developed TDM/TSM plans for several major developments in Los Angeles, the City of Santa Monica, and Metropolitan Bakersfield. Conducted a study to evaluate the impact of changing school hours on peak hour traffic in Honolulu, Hawaii. Involved in the implementation of a TSM plan for downtown Los Angeles. Developed rideshare programs for the Warner Center Employers Association and the Children's Hospital of Los Angeles.

Charrette Projects

Assisted in conducting downtown studies for the economic development and urban design for Clifton, Dumfries, Herndon, Manassas Park, and Occoquan, Virginia. Assisted in land use and economic studies for the Dulles Corridor Rail System by preparing specific development plans for two stations in Reston, Virginia. Assisted in the economic development and urban design of the east Hollywood area and the Watts area of Los Angeles, California.

EUGENE TANG, AICP
Senior Transportation Planner

EXPERIENCE

Traffic Engineering

Performed and directed staff with various traffic, circulation, traffic impact and site access studies for residential, commercial, industrial, institutional, recreational, and mixed-use developments throughout southern California and Hawaii. Supervised data collection efforts, prepared trip generation estimates, forecast future traffic volumes and performed level of service analyses. The operational analyses were performed using the Intersection Capacity Utilization (ICU), the Critical Movement Analysis (CMA), and the Highway Capacity Manual (HCM) methods. Developed mitigation measures for impacted intersections and performed Congestion Management Plan (CMP) analyses. Reviewed adequacy of driveway designs for truck access. Past projects include the Kaneohe Marine Corps Base Hawaii Gate Study, the Waikoloa Beach Resort Traffic Analysis and Internal Circulation Study, and the Selma/Vine Mixed-Use Project. Recent projects include The Collection at Riverpark Circulation Study, the Santa Paula East Area 1 Traffic Study, the Sunset-Doheny Mixed-Use Project, the and the Westfield Village at Topanga.

Transportation Planning

Assisted and participated with large scale transportation planning projects, including general/master plan updates, regional transportation plans, and transit feasibility studies. Past work includes the completion of the Transportation/Circulation Section of the Santa Monica Master Environmental Assessment, the Alameda Street Corridor Feasibility Study, the Maui Transportation Planning Model, the LACMTA Bus Signal Priority Project, and the 2030 Oahu Regional Transportation Plan. Recent projects include the Honolulu High Capacity Transit Corridor Project, the Disneyland Resort Master Plan Update, and the Crenshaw-Prairie Transportation Corridor.

Parking

Managed the collection of existing parking inventory and utilization in various parking studies. Assisted in the development of survey questions and managed the distribution and collection of surveys in the targeted areas. Also assisted in development of parking lot re-stripping plans. Past projects have included the Manhattan Village Renovation and Expansion Phase I, Parking Demand and Revenue Projection for the Cinerama Dome, YogaWorks at the Sunset Millennium, the Arizona Cardinals NFL Stadium and the Park Place Apartments in Burbank.

WORK EXPERIENCE

- Years of Experience – 7
- Years with Fehr & Peers – 7

EDUCATION

- Bachelor of Arts,
Geography/Environmental
Studies, University of
California, Los Angeles, 2000

AFFILIATIONS

- American Planning Association

CERTIFICATION

- American Institute of Certified
Planners, # 021985; 2007

BRIEF RESUME

Rev. Dr. Kaleo Patterson

Cultural Specialist

Pacific Justice and Reconciliation Center

19 N. Pauahi Street, Chinatown, Honolulu, HI 96817

(808) 330-3769 kaleop@hawaii.edu

Education:

H.S. Diploma, Waianae High School, 1972
A.A. Architectural Drafting, Leeward Community College
Civil Engineering Program, University of Alaska, Fairbanks
B.S. Liberal Arts, Regents, State University of New York, N.Y.
M. Divinity, Bangor Theological Seminary, Bangor Maine
D. Ministry, Chicago Theological Seminary
Graduate Studies, University of Maine Orono
Community Development, Center for Third World Organizing
Community Organizing, Pacific Institute for Community Organizing
Hawaiian Language, Kauai Community College

Professional Experience:

Association of Hawaiian Evangelical Churches, 6-Churches (20 years) Kahu/Pastor:
Kapaa First Hawaiian Church, Kapaa, Kauai
Koolauhuiia Church, Anahola, Kauai
Kaumakapili Church, Honolulu, Oahu
Kawaihao Church, Honolulu, Oahu
Ka Hana O Ke Akua Church, Waianae, Oahu
Waianae Protestant Church, Waianae, Oahu
Hawaii Ecumenical Coalition on Tourism, Executive Director
Coordinator, United Churches of Christ Apology to Na Kanaka Maoli
Presenter, at the International Tourism Business Exchange (ITB) Berlin,
Germany: Human Rights and Tourism.
Pacific Justice and Reconciliation Center
Convener, Native Hawaiian Coalition
Mediator, OHA and Community Groups
Mediator/Facilitator, Keaumoku Wal-Mart Burials
Community Consultant, Holomua Health Information Technology
Cultural consultant, Chinatown Association Kekaulike Burials
University of Hawaii Mediator - Center for Hawaiian Studies site issue
Kapiolani Community College, Interpret Hawaii - Program Coordinator,
Development of Host Culture All Industry Training, and Hawaii State Tour Guide
Certification Program re-development.
Curriculum Development: Cultural Transformation of the Workplace, Cross-Cultural
Communication, and New Leaders to Hawaii Orientation. Tourism as Creating a Culture
of Peace.
Kapiolani Community College – Southern China Universities and Business Colleges:
Cultural Exchange and Speaking Tour on Hawaiian Culture and Responsible Tourism
Northern Marianas Visitor – Consultant to develop Tour Guide Certification
Program and Host Culture All industry Training.
Instructor, Charminade University, Summer Hawaiian Culture Program:

Hawaiian Spirituality, Indigenous Peacemaking and Hooponopono,
Hawaiian Christian Reconciliation,
Adjunct Faculty. University of Hawaii, Matsunaga Institute of Peace,
And Pacific Peace Seminar: Indigenous Peacemaking, Hooponopono as Peacemaking
Co-Director, University of Hawaii, Center for Indigenous Leadership and Peacemaking
Adjunct Faculty, University of Hawaii, and School of Social Work:
Indigenous Leadership, Indigenous Peacemaking, and Hooponopono as Peacemaking

Community Involvement:

President, Kawaikini Canoe Club, Waialua, Kauai
President, Na Kahu Hikinaakala (State Curator ship of Wailua System of Heiau and
Historic Sites), Wailua, Kauai
Co-Convener, Racial Justice Working Group, National Council of Churches
Board Member, North American Center for Responsible Tourism
Member, Ecumenical Center for Third World Tourism
Executive Board Member, Native American Legal Rights Fund, Boulder, Colorado
Board of Directors, Kalihi-Palama Health Center
President, Waianae Coast Community Coalition
Board Member, Kahumana dba of Alternative Structures International
Vice President, Hawaii So Honbu Shotokan Karate International Federation
President and Chief Instructor, Hawaiian Shotokan Karate-Do
Chief Instructor and Administrator, Kaito Gakko Judo Jujitsu
Member, (past Kahunapule), Royal Order of Kamehameha Chapter 1
Native Hawaiian Representative, National Council of Churches, to the United Nations
General Assembly on Human Rights, Vienna, Austria
Church World Service North America Representative, United Nations
General Assembly of the Americas on Racism, Santiago, Chile
National Council of Churches Special Justice delegation to Cuba
Racial Justice Working Group delegation to Vieques, Puerto Rico
150th Anniversary Rongamau, delegation to Pohnpei, Micronesia

BRIEF RESUME

Dr. Haaheo Guanson

Cultural Specialist

Pacific Justice and Reconciliation Center
19 N. Pauahi Street, Chinatown, Honolulu, HI 96817
(808) 330-3769 kaleop@hawaii.edu

Education:

H.S Diploma, 1969	Punahou School, Honolulu, Hawaii
Bachelor of Science	Lewis and Clark College, Portland, Oregon
Doctor of Education	University of Southern California

Professional Experience:

Senior Advisor, City Planner, Executive Director, Director, Associate Professor, Producer/Writer,	City Council Member, Marilyn Bornhorst Community Development Block Grant, C/C Honolulu Hauula Tropical Food Tree Project Matsunaga Institute for Peace, University of Hawaii Matsunaga Institute for Peace, University of Hawaii Center for Labor Education and Research, University of Hawaii. Rice and Roses
Executive Director,	Pacific Justice and Reconciliation Center Chinatown Peace Center Waianae Coast Outreach Waimanalo Outreach Education and Training Programs Consulting Management
Kingian Trainer,	International Conference for Global Nonviolence Cuernavaca High Security Prison, Cuernavaca, Mexico Government and Community, Medellin, Columbia Government and Community, Bogota, Colombia Community Leaders, Johannesburg, South Africa
Peace Trainer,	Fellowship for Reconciliation Community Leaders, Kampala, Uganda Teachers and Survivors, Kigali, Rwanda
Human Rights Trainer, Instructor,	Gandhi Center in New Delhi Charminade University, Summer Hawaiian Culture Program: Hawaiian Spirituality, Indigenous Peacemaking and Hooponopono, Hawaiian Christian Reconciliation,
Adjunct Faculty.	University of Hawaii, Matsunaga Institute of Peace, Pacific Peace Seminar: Indigenous Peacemaking, Hooponopono as Peacemaking
Co-Director,	University of Hawaii, Center for Indigenous Leadership and Peacemaking
Adjunct Faculty,	University of Hawaii, and School of Social Work: Indigenous Leadership, Indigenous Peacemaking, and Hooponopono as Peacemaking
Consultant,	Ka Lei Manaolana, Breast Health Project

Community Involvement:

Educator	Waianae Coast Peace Education Program – Sister Ana
Member	Hula Alapai E Noho I Kualii of Kaimi Naauao Hawaii Nei
Founding Member	Na Alahele Statewide Public Access Advisory Council
President,	Hawaii Ecumenical Coalition on Tourism
	UCC Hawaiian Christian Apology and Reconciliation
Chairperson	United Church of Christ Board for Homeland Ministries
Vice President	International Fellowship of Reconciliation
Vice Chairperson	Fellowship of Reconciliation USA
Delegate	UCC delgation to Vieques, Puerto Rico
President	Dances We Dance (Betty Jones - Modern Dance)
Vice President	Center for Global Nonviolence
Secretary	Hawaii So Honbu Shotokan Karate International Federation
Chief Instructor	Makaha/Nanakuli Hawaiian Shotokan Karate-Do – Art of Peace, Nuuanu Dojo, Crossroads Dojo
Disaster Relief	Red Cross and YMCA, Chuck, Micronesia
PJRC Delegation	150 th Anniversary Rongamau, Pohnpei, Micronesia

OPERATIONS AND SAFETY SPECIALIST

Resume of John Clark
January 2008

1. Personal

- a. Home address: 894 Hokulani Street, Honolulu, Hawaii 96825
- b. Mailing address: P.O. Box 25277, Honolulu, Hawaii 96825
- c. Phone: 808 396-4227
- d. Email: jclark@hawaii.rr.com

2. Employment

- a. Retired Deputy Fire Chief of the Honolulu Fire Department. Date employed: June 1, 1972. Date retired: December 30, 2005.

Note: Served on the Fireboat as a firefighter crew member and as Deputy Fire Chief for over seven years, helped to oversee the operations of the Fireboat and other HFD vessels. Trained to Operations Level in Hazardous Materials.

Other positions:

1. Newspaper carrier. Honolulu Star Bulletin. 1959.
2. Laborer. Oahu Salt Company, Honolulu. 1961-63.
3. Laborer. Pre-stressed Concrete, Honolulu. 1964.
4. Laborer. C.W. Vincent, Inc., Honolulu. 1964-65.
5. Laborer. Metropolitan Maintenance, Honolulu. 1965-66.
6. Factory worker. Swedlow, Inc. Garden Grove, California. 1966.
7. Library worker. Sinclair Library. University of Hawaii-Manoa. 1966-67.
8. Desk Clerk. Coco Palms Hotel, Honolulu. Hawaiiiana Hotel, Honolulu. 1967-68.
9. Soldier (Specialist 5), U.S. Army. 1968-1970.
10. Lifeguard, Department of Parks and Recreation, City and County of Honolulu. 1970-1972.

- b. Self-employment:

1. Writer. 1972 to present. Author of seven books on Hawaii's beaches published by the University of Hawaii Press:

- a. Beaches of Oahu (1977)
- b. Beaches of Maui County (1980)
- c. Beaches of the Big Island (1985)
- d. Beaches of Kauai and Niihau (1990)
- e. Hawaii's Best Beaches (1998)
- f. Hawaii Place Names: Shores, Beaches, and Surf Sites (2001)
- g. Guardian of the Sea: Jizo in Hawaii (2007)

2. Planning Consultant. 1977 to present. Subcontractor on water safety projects and on Environmental Impact Statements, specifically social impact assessments to identify impacts to beach/ocean activities and user groups.

Recent projects include:

- Sheraton Waikiki Beach Restoration Project (Gray's Beach). Sea Engineering. 2007.
- Kahului Harbor Environmental Impact Statement (EIS) for State Department of Transportation. Belt Collins Hawaii Ltd. 2006.
- Wave Energy Technology (WET) Test Project at MCBH Kaneohe Bay, Hawaii- Scoping for an EA. Department of the Navy. 2002.
- EIS for Outfall Replacement for Wastewater Treatment Plant at Fort Kamehameha, Navy Public Works Center, Pearl Harbor, Hawaii. Department of the Navy. 2001.
- Voyager Submarines Hawaii Artificial Reef Site Designation. Scoping report. 1998.
- Beach and Ocean Recreation Study for Kiholo Bay, Division of State Parks, DLNR. 1996.
- Kealahou Bay State Historical Park Planning Report, Division of State Parks, DLNR. 1995.
- Recommendations for a Beach Park at Maniniowali, North Kona. Earthplan. 1992.
- Ocean and Shoreline Baseline Report for Palima Point, Ka'u, for the Spaceport EIS. Akala Products. 1992.
- Maniniowali Residential Community Social Impact Assessment. Earthplan. 1991.
- Gentry Waiaka Project, Kohala. Earthplan. 1991.
- Ocean Recreation Survey for Hapuna Beach State Park Area Expansion. Division of State Parks, DLNR. 1991.
- Hamakua Project. Planning report. 1991.
- Manele Golf Course and Golf Residential Project DEIS. 1990.
- Hawaiian Riviera Resort. Planning report. Earthplan. 1987.
- Coastal Uses at Punaluu, Hawaii, and Impacts of the Seamount Project as Perceived by Present Users. Akala Products. 1986.

3. Kalaheo Sports Productions. 1983 to present. Produce sports events including runs, run-swim biathlons, ocean swims, bodysurfing contests, surfing contests, and dragon boat races.

3. Education

- a. Honolulu Community College. Associate Degree in Fire Science, 1975.
- b. University of Hawaii-Manoa. Bachelor of Arts Degree in Hawaiian Studies, 1976.
- c. University of Hawaii-Manoa. Masters in Public Administration, 1994.

4. Community

- a. Hawaii Dragon Boat Races. Race Director. 1995 to present.
- b. National Healthy Beaches Campaign. Member national board of advisors.
- c. Hawaiian Historical Society. President 2004-2006, 2007-2008.
- d. World Police and Fire Games Surfing Event in Honolulu. Contest Director 2003, 2005